THE

# FARMER'S MAGAZINE:

MONDAY, 13. AUGUST 1804.

(N°. XIX.)

## BRANCH I.

### ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Conſiderations on Regulating the Value of Labour.*

SIR,

THE very extenſive circulation of your Magazine, and the high character it has deſervedly obtained, render the conſequences of any erroneous principle, which may find a footing in it, much more alarming, than if its circulation or its name had attained leſs extent and celebrity.

This conſideration induces me to expreſs a total diſapprobation of certain principles reſpecting the price of labour, which appeared in Number XVII. p. 43., quite oppoſite to what I have underſtood to be a liberal ſyſtem of political economy, yet ſanctioned by the authority, and ſupported by the influence, of a name which bears in itſelf the preſumption of ſuperior information; and muſt therefore have no ſmall effect in determining the opinion of a very numerous claſs of your readers, who, engaged in the practical detail of an uſeful and honourable occupation, without leiſure to ſtudy the abſtract principles of their profeſſion, allow themſelves to be directed in this reſpect by the concluſions of thoſe who, from their ſituation in life, and opportunities of ſtudy and reflection, having more the means of acquiring knowledge, are conſidered as more able to decide upon the ſubject. I allude to a letter from a very reſpectable correſpondent,

pondent (Sir George S. Mackenzie, Bart.), reſpecting the preſent price of labour in the Highlands.

The price of labour, generally ſpeaking, is one of the moſt important objects which can fall under the conſideration of the political economiſt; not only as being that which is moſt nearly and intimately connected with the welfare, happineſs and ſupport of the moſt numerous and moſt important claſſes of ſociety, but alſo as that which, forming a component part of the price of all commodities, muſt conſequently have conſiderable effect in determining the profits and advantages of every particular ſpeculation connected with any of the different branches of trade or manufacture, and as that which, from its wonderful influence in ſtimulating induſtry, and encouraging population, by holding forth a liberal reward to the workman, may juſtly be conſidered as the main ſpring which moves the complicated mechaniſm of every agricultural and commercial community.

Impreſſed, then, with the importance of the ſubject, I truſt you will not heſitate at inſerting a few obſervations which are intended to obviate the impreſſion which may have been made on the public mind by your correſpondent's letter, as well as to diſſipate thoſe apprehenſions which appear to be entertained by many Highland proprietors, regarding the effects which, they ſuppoſe, muſt enſue from the execution of the grand Caledonian Canal, in producing a general enhancement of the price of labour, and oppoſing a barrier to every agricultural improvement.

Without enlarging on that diſcovery which ſeems to have excited ſo much ſurpriſe in your correſpondent's mind, viz. That the eſtimate of farm buildings, houſe, offices, &c. &c. exceeded conſiderably one year's rent of the eſtate, it may juſt be obſerved, what an indefinite idea this ſtatement conveys to the mind, when neither the extent of the eſtate, nor the preſent rent of the land, the two main hinges upon which the argument muſt turn, are at all mentioned. But ſuppoſing the former moderate, and the latter ſuch as we know to be the common return of Highland *improveable* eſtates, ſtill I can perceive no juſt cauſe for complaint. That agriculture is a trade which, like all other trades, requires, in the firſt inſtance, a certain outlay of capital in order to render it ſucceſsful, is a problem which will require no demonſtration; that the leſs improved the land is in its preſent ſtate, the greater muſt be the capital employed in order to render it uſefully productive, is equally obvious; and that the improvement will be directly proportional to the capital judiciouſly expended, even your correſpondent will not deny. A very extenſive territory compriſing the different varieties of

'*moſs-quaking*

'*moſs-quaking bog and heath-covered mountain,*' which certainly form no ſmall part of the *moſt improveable* Highland eſtates, may yield a rent that will ſcarce pay the expence of its collection; and, in ſuch a caſe, it would not be at all ſurpriſing, if the incipient improvement of a ſingle corner of it exhauſted more than the net produce of the whole property. The improver cannot expect that an immediate riſe of rent ſhall accompany the expenditure of his capital, proportional to the profits he would have received for it had it been allowed to remain in his banker's hands, or been inveſted in ſome more lucrative mercantile ſpeculation;—he muſt lay his account with receiving much leſs—perhaps none at all at firſt: he muſt conſider himſelf as a capitaliſt who engages in ſome branch of manufacture; which, as its future profits will be great, requires and juſtifies a great advance, for the purchaſe of the neceſſary machinery and inſtruments, by which alone he can look forward to future profit, or to a ſucceſsful competition with thoſe who have already made ſome advances in the trade. But neither this great outlay, nor the ſmall immediate profit which he can derive from it, ought to damp his proſpects, or ſlacken his exertions, or occaſion any regret or remorſe for the ſum which he thus applies. It would ſurely be conſidered as ſorry and niggardly policy in a manufacturer, were he to repine at the expence of the materials and inſtruments of his trade, or to purchaſe them, of an inferior quality, in order to pocket the petty ſavings of his meanneſs. But, ſubſtantial farm-houſes, convenient buildings, ſtrong encloſures, and well conſtructed roads, form the moſt eſſential parts of that machinery which is required for the manufacture of the produce of the earth; and therefore, for an improver of land to put a ſtop to his operations on account of the expence with which they are attended, or to grudge the neceſſary outlay for his buildings and encloſures, would be as abſurd as for the blackſmith to ſhut up ſhop on account of the expence of the bellows or anvil; or for the weaver to lament the coſt of his yarn, his ſhuttle or his loom. The truth is, it is not the preſent, but the future conſequences, which ought, in every inveſtiture of capital, to regulate our conduct; and theſe, we may ſafely aſſert, will, in the cultivation of the ſoil, be adequate to even our moſt ſanguine anticipations.

The labours of the ſpring would appear to him

'Who ne'er looks forward farther than his noſe,'

to be the acts of madneſs and wicked prodigality, waſting the precious food of man, and ſcattering the grain unwiſely on the ground. But to him who, in the labours of the ſeed-time, an-

cipates the abundance of the harveſt,—who in every pickle ſees a head-ſtalk, and in every handful a buſhel, the caſt of the ſower, like the ſhower of plenty, will be hailed as a bleſſing to the human race; and the expence of tillage will be conſidered as a loan to nature, for which an uſurious intereſt is about to be returned.

Let not, then, ſhort-ſighted views narrow the field of agricultural improvement; let not the proprietor conſider his intereſt as diſtinct from that of the poſſeſſor of the ſoil. If he wiſhes his lands to wave with corn, and his eſtate to be a garden, let him not grudge to buy the plough, the harrow and the ſpade; but, above all, let him render the ſituation of the cultivators of the ſoil as eaſy as poſſible, and let him be aſſured he has made the firſt and moſt eſſential ſtep to improvement, when neither a homeleſs tenant or a houſeleſs farm exiſt upon his property.

I have enlarged a little on this ſubject, becauſe complaints, ſimilar to thoſe of your correſpondent, are not unfrequent at the preſent day, and have occaſioned many landed proprietors to deſiſt from improvements they had otherwiſe intended.

What I have ſaid relates to the remote effects of ſuch improvements; but it may alſo be obſerved, that the immediate ones are not ſo unproductive as is generally imagined. The value of every commodity, in a civilized community, is determined by the expence of its production—the quantity of labour that has been employed upon it—as well as certain ideas of utility and convenience, which may depend upon the accidental conſideration of mankind. This holds, peculiarly, with regard to the habitations of men. A good houſe will, in itſelf, independent of all other circumſtances, rank high in the eſtimation of men. They have a very natural pride in being well lodged, and comfortably ſituated,—and in poſſeſſing thoſe little conveniences which, though not abſolutely among the neceſſaries, can ſcarcely be claſſed among the luxuries of life. The poſſeſſion of theſe will always be an object of deſire to mankind; and as it flatters vanity, it is paid for with pleaſure. This is remarkably the caſe among the lower Scots, notoriouſly in point of dreſs, and equally ſo with reſpect to dwellings, wherever there is room for a choice, or reaſon for a preference. In a competition of tenants, therefore, this will have its effect; a new, convenient, and ſubſtantial ſteading of farm buildings, will, for the comforts it affords, independent of its utility as a neceſſary component part of the machinery which is requiſite for his uſe as a manufacturer of rude produce, always decide the preference of an incoming tenant, other things being the ſame, or nearly the

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ſame. The ſlate roof, and the ſaſh windows—the freeſtone front, and the plaſtered ceiling, have often procured for the landlord, one or two ſhillings more per acre than he would have got, if the moſs-grown thatch, the bolſtered light-hole, or the wooden lintel, had decorated the more ruſtic cottage of his farm; and that, too, ſuppoſing that the land might have been as well tilled while the tenant lived in the latter, as if he had inhabited the former. A good houſe, therefore, on a piece of waſte land, acts as a premium to its improvement; and no better kind of premium can be deviſed. People will then cultivate the land around it, which, without it, would not have attracted their labour; and, for the ſame reaſon, will give an increaſed rent for the land, becauſe they are more comfortably ſituated. Therefore, the outlay of money in ſuch buildings, has an immediate effect in raiſing the rent of land; and thus returns a profit to the landlord, equal perhaps to good intereſt for the ſum. We do not, however, always diſcriminate properly the true cauſes of an increaſe of rent.

But beſides this immediate effect—the remote profits to which I formerly alluded, will be objects of greater importance; for the ſame advantages will accrue to the farmer, in the proſecution of his trade, from a good ſteading of farm buildings, as will accrue to any manufacturer from the adoption or invention of any new machine for abridging, facilitating, or expediting labour, or for improving the nature and quality of the article he produces, and conſequently increaſing the profit he derives from it, by extending the market, and augmenting the demand.

With regard to the preſent high price of ſkilled labour in the Highland counties, complained of as ſuch an oppreſſion, and lamented over as ſo great an evil, I muſt confeſs I ſee no cauſe for ſurpriſe. It is a natural conſequence of the peculiar circumſtances which have attended the ſituation of that country—an event which every man of reflection muſt have anticipated; and which, ſo far from being the herald of approaching ruin, is in itſelf the moſt deciſive proof of an increaſing proſperity. Several circumſtances may be pointed out, which have contributed to enhance the value of ſkilled labour,—in mentioning which, we may not only explain its real cauſes, but alſo diminiſh the dread of its evil effects.

Inequalities in the nature of different employments, lay the foundation of correſponding inequalities in the profits they afford; and when exiſting in the ſame employment, they muſt alſo occaſion a difference in the proportion of its rewards. Theſe inequalities may be of a local, temporary, or accidental nature;

and wherever they exiſt, they occaſion a variation in the price of labour, as well between the different countries of the world, as between the different counties of the ſame kingdom. Hence we may perceive the fallacy of fixing on the price of labour, in any particular part of the country, as a criterion by which we are to denominate the rates, at other places, either moderate or extravagant, according as they ſink below, or exceed it. This, however, is not always attended to. The apparent effects are contraſted, but the exiſting circumſtances are overlooked; and a deciſion is made, which muſt be erroneous. Nothing, however, is ſo common as to hear country wages termed exorbitant, becauſe they either approach to, or equal, the wages of the towns. Thus, your correſpondent after lamenting the extravagance of maſon work in Roſsſhire, in order to convey to us ſome idea of it, mentions that 'he believes it is equal to what is given to the beſt hands in Edinburgh.' But this is no proof of the extravagance of the Highland maſon. Encountering difficulties, of which the town maſon is ignorant,—ſtruggling againſt a ſtream which almoſt overwhelms him,—the wages which he demands, are a moderate compenſation for the difficulties and diſadvantages by which he is ſurrounded.

1. The Inconſtancy of Employment.

That the wages of labour vary continually, in different employments, with the conſtancy or inconſtancy of employment, has been pointed out by the profound author of the Wealth of Nations. 'A maſon or bricklayer' (ſays Dr Smith) 'can neither work in hard froſt, nor in foul weather; and his employment at all other times depends upon the occaſional calls of his cuſtomers. He is liable, in conſequence, to be frequently without any. What he earns, therefore, while employed, muſt not only maintain him while he is idle, but make him ſome compenſation for thoſe anxious and deſponding moments which the thought of ſo precarious a ſituation muſt ſomtimes occaſion. While the computed earnings of the greater part of manufacturers, accordingly, are merely upon a level with the ordinary wages of common labourers, thoſe of maſons and bricklayers are generally from a half more to double thoſe wages.' On the ſame principle, it may be obſerved, that difference of ſituation &c. will occaſion a difference of wages even in the ſame occupation; and that the employment of a maſon or bricklayer in a thriving and populous city, where public works and private buildings are daily ſpringing up, from commercial opulence, with a rapidity proportioned to their ſplendour and utility, muſt be more certain and conſtant, than of one ſituated in a remote and uncultivated province, and ſtruggling with all the difficulties of unaſſiſted nature, who could only look forward

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to occaſional employment in repairing the rotten caſtle of a Highland chieftain, or building now and then a cottage for the moſt favoured of the clan. To the labourer of the town, every thing is at hand, all is convenience; without any trouble, ſolicitude or exertion, the journeymen craftsmen are provided with conſtant work—an advantage which they derive, not only from the more uniform demand, but alſo from a ſubdiviſion which takes place in the trade, when eſtabliſhed to any extent—which, by enſuring for them a ſufficient number of immediate employers through the whole year, enables them to look with indifference on the fluctuations of the future.

This claſs of employers is that of the maſter builders, or contracting capitaliſts—who, having a certain ſtock inveſted in the trade, muſt find conſtant uſe for it—do therefore enter into many ſpeculations, and conſequently employ a number of ſkilled hands to execute their engagements; and indeed would be happy to engage them, at moderate wages, in their ſervice, longer than the workmen are inclined to ſtipulate.

But, in the remote parts of the country, particularly in Roſsſhire, Inverneſsſhire, and the greater part of the Highland territory, although, from the improvements now happily ſet on foot, a demand for ſkilled labour is certainly created, yet none of its branches have acquired that extent and eſtabliſhment, which cheapens labour by rendering it more perfect, which augments its powers by ſimplifying its proceſs, and which admits of ſuch a ſubdiviſion as that which I have already noticed as taking place in the towns.

The few operative hands, who hitherto were to be found in ſuch ſituations, were obliged to carry on (as is well known) other employments, to make up for the inconſtancy of their craft. They had generally ſmall farms; building became a ſecondary object; their labour was thus divided between two trades, and conſequently they muſt have been imperfect in either. Hence, however, their wages in thoſe places continued low. But, in the preſent ſituation of things, when ſo many patriotic Highland proprietors have commenced improvements on their improveable eſtates, and ſeem convinced that the moſt effectual means of accompliſhing this end, is to ſettle the tenant comfortably in a ſubſtantial ſteading of farm houſes; if they with them to be well conſtructed, they muſt employ well-inſtructed and perfectly ſkilled workmen. Now, in order to attain this end, a liberal advance of wages is the only effectual means; and this advance muſt not only be proportioned to the difference between the rates of half-taught and of perfect labour, but alſo to the embarraſſments and difficulties which the labourer muſt ſuſtain, in removing from the

conſtant and convenient market of the town, to the more uncertain, remote, and diſagreeable market of an uncultivated country. Nor muſt it be forgotten, that

2. When the ſkilled labourer has removed to this new field, he ſuffers much anxiety and fatigue, and undergoes numerous difficulties and diſappointments, before he can take his tools in his hands. The houſe he has engaged to build may perhaps be many miles from the ſpot where he was laſt at work, and may be a conſiderable diſtance from his own dwelling. He has firſt to tranſport his planks, ſcaffolding, tools, and all the other accompaniments of his labour. He has to lay the foundation ſtone on an unſheltered heath, far perhaps from the habitations of men, expoſed to the frequent inclemencies of the weather, without a ſhed to ſave him from the wet, or to ſcreen him from the wind; in ſhort, deſtitute of all thoſe conveniences which adminiſtered to his accommodation in the town.

Theſe circumſtances, it is obvious, muſt be compenſated for by an increaſe of wages. But, above all, he muſt be remunerated for the inconvenience he is obliged to ſubmit to in leaving his family. It has been well obſerved, 'that of all luggage, man is the moſt difficult to be tranſported.' This obſervation is juſt, when only a few miles conſtitute the diſtance. Whether the ſite of the building is ſo remote from the place of his dwelling, that the workman is forced to abſent himſelf from his family during the continuance of work, or whether it is only ſo far diſtant as to oblige him to walk three or four miles to and from the place, before and after his daily labour, (inſtances of which occur frequently), an increaſed reward is the only premium which can tempt him to ſubmit to ſuch painful exertions. It may be ſaid, that the dread of wanting employment will induce him to put up with theſe inconveniences, without raiſing his wages. This is in fact a diminution in the rate of labour; but it will only occur in thoſe places already well peopled, and advanced in cultivation and improvement, ſuch as the Highlands *will be* at ſome future period, but ſuch as they *are not* at preſent. Improvements have only commenced there; the competition is rather among the employers, than the workmen; and when that is the caſe, wages muſt neceſſarily riſe;—until the landed proprietors, having advanced conſiderably in the improvement of their eſtates, and workmen having become plentiful, attracted by the liberal reward, the ſupply is thus brought on a level with the demand, and a competition gradually is produced among the labourers.

3. Dr Smith mentions, that the impoſſibility of executing maſon-work in foul weather, is a cauſe of the increaſed wages of labourers

labourers thus employed. Whoever is acquainted with the number of ſuch days in the Highland climate, will ſee, in this alſo, an explanation of the high rate of ſuch work there.

I have been thus explicit in detailing what I conceive to be a few of the real cauſes of the high rate of ſkilled labour in the Highland counties; becauſe your correſpondent ſeems to me to have totally miſapprehended them, and to have been led inconſiderately to this moſt aſtoniſhing of all concluſions, that it aroſe from a combination of the workmen among themſelves; and that, therefore, the evil muſt be checked either by a counter-combination of the country gentlemen, or by the interference of the civil magiſtrate; two meaſures, than which, he could not have imagined any more effectual, for augmenting the evil he ſeems deſirous to diminiſh—for ſtifling the improvements which he has already planned—for retarding the increaſe of food and population, and driving the inhabitants from their native land.

The dread of combination, like that of monopoly and foreſtalling, and all the other ſpecies of intellectual phantaſmagoria, which haunted for a while the heated imaginations of men, had, I thought, been entirely expelled from the confines of this iſland, by the leſs clouded light of the nineteenth century, and the extenſive circulation of the Farmer's Magazine; nor, it muſt be confeſſed, did I expect to find, that even *Highland hoſpitality* could have afforded it an aſylum.

If ſuch an apprehenſion can admit of any excuſe, it is only in 'the buſy haunts of men;' thoſe crowded walks of manufacturing induſtry, where a numerous claſs of ſhrewd and vigilant artiſans, by a corelation of intereſt, and a co-operation of endeavours, have ſome proſpect of forming a combination with ſucceſs. But here, even the propriety of civil interference may be diſputed; for as the maſters have the advantage of credit and capital to ſtand out againſt ſuch demands, while the workmen have neither of theſe—and, depending altogether on employment for ſubſiſtence, cannot abſtain from labour above a few days at moſt—it is therefore the fault of the maſters themſelves if they are the firſt to yield;—and this, ſuppoſing even the ſtrongeſt poſſible caſe of combination, in which a joint fund may have been provided by the journeymen for the purpoſe of ſupporting their claims. But, that a general combination ſhould be ſuppoſed to take place through the Highland counties of Scotland, among a ſet of poor, half-ſkilled craftſmen, thinly ſcattered, with the interval of miles, among the villages and *clachins* of the country, who, till of late years, have been accuſtomed to chiſſel turf inſtead of freeſtone, and plaſter with mud in place of mortar, and who are actually dependant on the labour of to-day, to

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ſecure the ſubſiſtence of to-morrow,—is an event as improbable, as the means recommended for obviating it (if true) are inconſiſtent with thoſe ſound, evident, and eſtabliſhed principles of political economy, which are the eminent characteriſtics of an enlightened age.

In fact, your correſpondent ſeems to have confounded two things eſſentially different—the combination of the workmen, and the competition of the maſters; and has raſhly attributed to the former, conſequences reſulting entirely from the latter. In arguing thus, it is evident that he argues completely againſt his own intereſt. For whence proceeds the competition of maſters? Certainly from ſome good to be derived from ſome expected advantage, which tempts them to bid againſt one another, in order to obtain hands to execute their work; and thus leads them voluntarily to break through that natural combination not to raiſe wages, which always exiſts among every claſs of employers. The advantage to be derived, is an increaſed produce from their land, and an augmented price for that produce: and the riſe of wages is merely the premium advanced to enſure their future gains. As in America, and other newly-peopled countries, where the price of labour roſe extravagantly high, the moſt powerful incentive to population is created; a family becomes a ſource of proſperity, inſtead of oppreſſion; and the poor man counts his wealth when he numbers his offspring. As the liberal wages he receives, enable him to live more eaſily and happily; ſo will he be the more diſpoſed to communicate that eaſe and that happineſs to others—to marry, and rear around him a numerous and induſtrious brood. This increaſe of population alſo will prove a freſh ſtimulus to the cultivation of the land—a new ſpring of wealth to the farmer. A market for the produce of his eſtate will thus be eſtabliſhed on the property of every landholder, and a better price will be paid for it. A demand will be occaſioned for the cheeſe, the butter, the milk, the fowls, the eggs, and other luxuries, as well as for the neceſſary produce of the farm; and a competition among the purchaſers of theſe will add to the profits of the farmer: And thus, although the nominal wages of labour may ſuffer no change, yet the real wages will be reduced by the increaſed price of his ſaleable commodities, which a growing market has brought to the proprietor of the produce of the ſoil. The liberal reward of labour, therefore, as it occaſions, ſo, likewiſe, it proceeds from, increaſing wealth; and, in words which ſhould be familiar to every one, 'To complain of it, is to lament over the neceſſary effect and cauſe of the greateſt public proſperity.'

While I thus diſavow entirely the principles of your reſpectable correſpondent, I cannot ſufficiently commend, or recommend

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to your notice, the hint he throws out reſpecting the conſtruction of a regular table of prices in the different pariſhes, diſtricts, or counties of Scotland, to be communicated by monthly or quarterly reports. Regular reports of this kind, including not only the price of labour in all its varieties—of meal, meat, and bread, as he propoſes; but alſo of all grain, graſs, hay, ſtraw, eggs, milk, butter, cheeſe, and proviſions and produce of all ſorts,—would give us more real inſight into the ſituation of the country, more accurate knowledge of our national reſources, and more perfect teſts of the riches or poverty, the happineſs or miſery of the different inhabitants of this iſland, than any mode of inveſtigation which has hitherto been adopted. It would, above all, tend to explain the cauſes, and remedy the effects of thoſe inequalities of value which exiſt in different counties of the ſame kingdom; enabling us to trace to more natural and probable circumſtances than the combination of workmen, the high price of labour in different parts; and would, more effectually perhaps than any arguments I can uſe, convince your correſpondent of the groundleſs nature of thoſe apprehenſions which, he confeſſes, caſt a gloom upon his mind, in contemplating the magnificent proſpect of the Caledonian Canal.

——————'*Sic nos in luce timemus*
*Interdum nihilo qua ſunt metuenda magis quam*
*Quæ pueri in tenebris pavitant, finguntque futuræ.*'

I had intended to enter into ſome diſcuſſion upon this projected work, reſpecting its probable influence in meliorating the condition of the Highlands; but having already treſpaſſed ſo long on your patience in this letter, I may perhaps make it the ſubject of a ſeparate communication.

*Ayrſhire*, 1804. POL-ŒCONOMICUS.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Curſory Obſervations on Farm Management in the Diſtrict betwixt the River Tyne in Northumberland and the Frith of Forth.*

SIR,

FOR a conſiderable number of years, I was engaged, under my father, in the practice of agriculture, on a pretty extenſive ſcale; and, though I have for ſome time been concerned in buſineſs of a different nature, early habit had made ſo deep an impreſſion, that I have always been particularly attached to rural life, and have never ceaſed to direct a part of my attention to agricultural affairs,

affairs, which, within a ſhort period, will probably engage the whole of it. Your valuable Magazine has, therefore, attracted my particular notice. In it, as well as in other agricultural publications, I obſerve that ſome authors have pointed out that diſtrict which lies between the Tyne and the Frith of Forth, and extends from the ſea, through Northumberland and Berwickſhire, into a conſiderable part of Roxburghſhire, as a pattern of perfection in agriculture and live ſtock. Having lately had occaſion to paſs through that part of the country, I arranged matters ſo, as to have leiſure to make many remarks and inquiries relative to the management purſued in moſt parts of it; and it is with great pleaſure and ſatisfaction that I found nearly realized, what I conceived exiſted only in the imagination of ſome warm and zealous advocates, *viz.* a perfect ſyſtem of rural management. There, the farms, *generally large*, are nearly all held under the ſecurity of long leaſes, occupied by enlightened tenants, poſſeſſing abundant capital, activity, and enterprize, and cultivated in a maſterly ſtyle. There, we behold the plough aſcending the ſummits of ſteep hills; which, among tenants at will, or thoſe holding by ſhort leaſes, would be doomed to eternal ſterility. There, we not only behold great crops of corn raiſed on inferior ſoils, farmed at from 25 to 30 ſhillings an acre, (which, in ſeveral other parts of the kingdom, notwithſtanding their proximity to better markets, would ſcarcely bring one half of theſe rents), but even a greater proportion of them taken to market, than when eſtates are divided into ſmall farms. There, certain political economiſts and arithmeticians may be ſatisfied, that, though the farmers have decreaſed in number, the country has rapidly increaſed in improvement and population; and there we find what is really obſerved in our beſt managed *ſouthern diſtricts*, namely, that to conſiderable theoretical and ſcientific knowledge, the cultivators of the ſoil join *excellent practice*; and that the beſt tillage farmers are nearly all adepts in breeding, rearing, and fattening live ſtock. In that diſtrict, Sir, I have alſo obſerved that the cultivation of turnips is more ſucceſsfully purſued than in any other I have ſeen; and this, in my mind, ariſes, in a great meaſure, from the almoſt univerſal practice of ſowing the ſeed in rows on ſmall ridges, (containing all the dung in their inſides, with broad intervals of 26 to 28 inches), and to the facility which that mode affords of giving the moſt cheap and efficacious and frequent hoeings. The propriety of this mode of cultivation, however, has been controverted by ſome of your correſpondents, but I perfectly coincide in the opinion you have expreſſed upon it. And here I muſt beg leave to remark, that though 'the ſharp nib'

of

of the critical pen of a conductor of such a Work as yours may sometimes be followed by the disadvantages so ably pointed out by your correspondent *Epicurus*; yet, upon the whole, I am of opinion, that *your* pen will be productive of advantages, which will overbalance its prejudicial effects, especially in supporting the congruity of your Publication. Without flattery, almost all the remarks you have made, seem to have proceeded from a profound knowledge of practical agriculture, and unquestionably render your Magazine more entertaining and useful. The turnip crop, if raised on suitable soil, and judiciously managed, is the *sheet-anchor* of the farmer, and the never-failing procurer of great crops, which, by increasing the quantity of manure, lays the foundation of succeeding abundance. Though I am a disciple of the Tullian school with respect to the importance of pulverization and cleaning; yet I am decidedly of opinion, that that state of soil which promotes the utmost luxuriance and fructification in the crops, cannot be attained but by plentiful and complete manuring. From extensive information, and pretty accurate remarks of my own, I am inclined to give the preference to drilling of corn as well as turnips; and I observe, with pleasure, that that system is pursued to a considerable extent in several parts of the district I have named, and appears to be on the increase. In the southern counties, however, it is practised on a more extensive scale; and, in some of them, bare fallowing is reduced to the narrow limits which, I observe, some agriculturists zealously contend, should be prescribed to the cultivators of the north; but, in the warmth of their zeal, it appears that they totally overlook a great disadvantage which the latter husbandmen have to contend with, *the disadvantage of climate*. Considering this, and the nature of much of their soil, a bare fallowing, once in seven or eight years, seems absolutely necessary, in order to have their lands in a clean and productive state; and I must do them the justice to say, that I have observed fewer weeds, and less couch, &c. in their fields, than in most of the more southern districts. They are also superior to the farmers in the latter mentioned parts of the kingdom in the management of calcareous manure, which they apply to fresh lands, and those abounding in vegetable matter; whereas, in some other districts, it is applied every three or four years to lands which have been scores of years in tillage; and pretty accurate experiments have proved, that lime applied to old tillage land does not repay the expence. Indeed, some agriculturists maintain, that it is like pouring medicine into a dead body, upon which it is impossible that it can operate. Viewing lime in this light, I cannot sufficiently praise the judicious system pursued in the north, of alternate

alternate corn and graſs. By the interval of one, two, or more years between ſowing the corn lands with artificial graſs-ſeeds, and again converting them into tillage, the ground is always freſh, always impregnated with matter on which lime acts powerfully; and by applying it *alone* to the ſtrongeſt of the land, great corn crops are raiſed, while nearly all the dung is appropriated to the turnip ſoils. Here we obſerve an additional reaſon for the *vaſt* crops of that uſeful root, which are obtained in the northern diſtricts, and for the ſolid foundation which is laid for increaſing fertility in the increaſing quantity of vegetable and animal manures.

Having thus, Sir, beſtowed upon the northern agriculturiſts that tribute of praiſe to which their diſtinguiſhed merits entitle them, I muſt now proceed to a more painful, but perhaps not leſs neceſſary talk, that *of cenſuring ſome parts of their management*. They generally leave far too much ſtraw *uncut* in their fields; and the practice of harrowing up the ſtubbles, and carrying them to litter the fold yards, is purſued by but a few farmers. Scourings of ditches, other rich earth, and the top ſods of drains, are not carried to be mixed with other manures, as in many parts of the ſouth, where potato tops, cabbage ſtalks, ruſhes, quickens, &c. are all collected and mixed up with lime, dung, &c.; and where the utmoſt exertions are made to raiſe rich compoſts, and to increaſe the quantity of that uſeful and invaluable article *manure*. Inſtead of this judicious practice, however, I have with ſorrow obſerved, *on both ſides of the Tweed*, even *on ſome pattern farms*, large quantities of potato and cabbage ſtems, quickens, and other valuable vegetable matter, going to waſte in ſmall heaps at the ends of ridges and ſides of the roads. This forms a diſgraceful contraſt to the other excellent management of theſe northern farmers; is detrimental to themſelves; and, conſidering the influence of their example, injurious to the adjoining country. In another part of this diſtrict, namely, that fertile tract of land between the Peaſe-Bridge and the city of Edinburgh, which ſeems, upon the whole, to be admirably cultivated and manured, ſome defects of a ſimilar nature may be obſerved. But the greateſt objections I can urge to the management there purſued, are, that ſome farmers ſuffer too many runches, &c. (which drilling and horſe-hoeing would deſtroy) to grow among their corn; and that a part of the land ſeems in a conſiderable degree exhauſted by too long, or too frequent aration. Inſtead of taking only one crop of clover and rye-graſs, would it not be more profitable management, *in the courſe of a long leaſe*, to keep more ſheep, and allow the land to remain two or three years in graſs previous to the introduc-

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tion of the plough? The ſituation of ſeveral farms is no doubt favourable for obtaining large ſupplies of foreign manure and ſea-weed: ſtill, however, the quantities applied in many parts, ſeem inadequate to the ſupport of that high ſtate of fertility in which ſuch excellent ſoil may be continued. I intended to have offered a few remarks on the courſe of crops recommended by the Aſſociated Farmers in Peeblesſhire, inſerted in your Magazine for November laſt, and, particularly, whether in the end it would not be more advantageous to purſue a five or ſix, inſtead of a four-courſe ſhift; but, having already occupied too many of your valuable pages, I muſt requeſt that ſome of your more able correſpondents will fully inveſtigate ſo important a ſubject. Local ſituation, and the relative prices of corn and butcher-meat, will, no doubt, have great weight in determining the courſe which ought to be purſued. I cannot, however, but conceive it extremely doubtful, whether, under a four-courſe ſhift, any land but that of the firſt quality can be *continued for a length of time* in a ſufficiently productive ſtate. Permit me to ſubſcribe myſelf a well-wiſher to your Publication,

VIATOR.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Thoughts on the Analyſation of Lime, &c.*

*By* SIR GEO. S. MACKENZIE, *Bart.*

SIR,

I BEG leave to notice your correſpondent A. S.'s lime paper, p. 27, who, I am perſuaded, was not aware how much his method of aſcertaining the purity of limeſtone is apt to miſlead perſons not converſant in the analyſis of minerals, otherwiſe he would not have allowed you to publiſh it. Strict ſcientific language is not to be expected from a farmer, nor ought he to be expected to be able to underſtand it; and therefore, on the chemical language of A. S. I forbear making any remarks. I truſt he will not be offended at my preſuming to correct him, when I do not pretend to be a *profound* chemiſt, but only profeſs to have a ſmattering of that ſcience. I have ſo much experience, however, in the art of analyſis, that I can affirm, without danger of contradiction, that although the analyſis of limeſtone is comparatively eaſy, it is by no means *very* eaſy to diſtinguiſh good from bad, as A. S. aſſerts. I beg leave to inform him, *firſt*, that limeſtone is a neutral ſalt, and is now known among chemiſts

chemiſts by the name Carbonate of lime, implying, what A. S. ſeems to know, that it is the reſult of the combination of lime (not yet aſcertained to be an alkali, though it has properties in common with alkalis, but conſidered at preſent as an earth) and carbonic acid, which probably, in its union with lime, loſes the form of gas or air, although, when ſeparated from the earth, it takes that form. A. S. is in a prodigious error, when he directs us to buy muriatic acid from *any* laboratory. The common acid of the ſhops will cauſe abundance of ſediment to appear, even when the limeſtone is perfectly pure. I have had occaſion to uſe about as much muriatic acid as moſt amateurs of the art of chemical analyſis, and I can aſſure A. S. I never yet found any acid which did not occaſion me conſiderable pains to purify. It always contained more or leſs ſulphuric acid, which gets acceſs to it in the common proceſs for obtaining it; and this acid, with lime, forms an *inſoluble* compound, called ſulphate of lime, or gypſum. In this way, A. S. will perceive that the beſt of ten limeſtones he may try, may appear, by his method of examination, to be the worſt. Unleſs, therefore, perfectly pure acid be uſed, the teſt of A. S. is a deception. But for the further information of A. S., and ſuch of your readers as may have adopted his recipe, let us ſuppoſe that the acid is perfectly *pure*; ſtill the teſt of the *quantity of ſediment* is not ſufficient. Limeſtones, beſides lime, may, and almoſt always do, contain a variety of other earths, and ſometimes metals, moſt frequently iron. Now, the only one of theſe earths that will be left undiſſolved is the ſilicious; and if any inflammable matter is contained in the limeſtone, it will alſo be left. As to the ſeparation of the remaining earths from the ſolution, and from each other, ſo as to aſcertain their proportion to the lime and to each other, this requires manual ſkill, excluſive of conſiderable knowledge in chemiſtry, and which can be acquired only by the greateſt care and patience. Now, of two limeſtones, the one which leaves leaſt ſediment may be the worſt, and the other the beſt. If A. S. ſtudies the ſubject, he will diſcover that no ſuperficial trials, ſuch as he recommends, are of any uſe in aſcertaining the purity of limeſtone.

Without a regular analyſis by a ſkilful chemiſt, the *real* value of limeſtone cannot be aſcertained. The only method with which I am acquainted, and by which we may have a tolerable way of judging of the quality of limeſtone, *without a regular analyſis*, is the following. Having provided *pure* acid, a ſmall bottle, with a cork or glaſs ſtopper, and an *accurate* and *ſenſible* balance, and properly *adjuſted* weights, proceed as follows. Weigh the bottle, after having put in a quantity of acid, with its cork; having

having weighed the ſtone to be examined, put it into the acid, and, immediately when the effervescence ceaſes, replace the cork, and again weigh the whole. The loſs of weight is here to be attributed ſolely to the expulſion of the carbonic acid; and the greater the loſs, we may pretty ſafely aſſure ourſelves, the purer will the limeſtone be. As the muriatic acid is ſomewhat volatile, a ſmall allowance may be made on this account, in proportion to the extent of ſurface expoſed. And I may here caution thoſe who try this method, againſt filling the bottle too full, as, during the extrication of the gas, ſome acid may ſpatter over.

A. S. may ſay that the loſs of weight can be better aſcertained by burning, at leaſt with leſs trouble. I ſhall only mention one circumſtance; that if any inflammable matter happens to be preſent, its loſs, by being burnt off, will make the limeſtone appear better than it really is. A limeſtone is mentioned by A. S. as containing 99½ *per cent.* of carbonate of lime. It would have been ſatisfactory if he had told us what the remaining half *per cent.* conſiſted of. In taking my leave of A. S., I cannot help remarking, with regret, that ſo many of your correſpondents do not chooſe their names to be publiſhed. There can be no other apology for them, than that they are afraid of attack. I would only aſk, need a man be aſhamed of being told that any opinion he may have advanced is ill founded? Thoſe who write for a periodical publication ſuch as yours, do ſo as much for the ſake of receiving as of giving information. There is no danger of your admitting into the Farmer's Magazine any thing like abuſe, or uſeleſs ſeverity. I do not ſcruple to ſay that A. S. was rather raſh in ſending you the letter under review; and, from what is therein diſplayed, it appears probable, that, had he been in the cuſtom of ſigning his real name, he would never have ſent you the ſaid letter. I am led to ſuppoſe this, becauſe very ſuperficial inquiry at the ſource from whence he has derived his technical terms, would have convinced him of the inſufficiency of the teſt he propoſes for aſcertaining the quality of limeſtone, and would not have permitted him to offer his aſſiſtance to the purchaſers of lime, with ſo much apparent confidence. I am not againſt your admitting uſeful and important information without ſignature; but I certainly could not approve of any attack being admitted into the Farmer's Magazine, when one of the parties at leaſt is unknown.

Your own note on another letter from A. S., is, I apprehend, ſufficient to ſatisfy the deſire expreſſed at the end of his letter, concerning the ſmut of wheat. I do not find that the opinion of a gentleman, whoſe character and talents entitle him to the

greateſt reſpect from farmers (I mean the profeſſor of agriculture in the univerſity of Edinburgh) concerning the nature of ſmut, is generally known. He is of opinion, that ſmut is a diſeaſe in corn, ſomewhat ſimilar to cancer in the human body, and that it is communicated by a ſort of inoculation, from the attachment of the ſubſtance of diſeaſed ears to ſound ones; the plants from which, are affected by this diſeaſe in their whole conſtitution, the diſeaſe being particularly manifeſted in the ears. If I have not ſtated this correctly, Dr Coventry will have the goodneſs to put me right. Although it may be difficult to aſcertain its preciſe nature, I think there can be little doubt of ſmut being a diſeaſe of the conſtitution of the plant. Indeed, the practice of pickling in a manner proves it, as this proceſs is intended to deſtroy the cauſe of infection, which appears to have no influence on the ſeed till it begins to germinate. A habit I uſed to have of pulling unripe corn for the ſake of chewing the ſucculent part of the ſtalk under the uppermoſt knot, led me to diſcover, that from the very firſt formation of the ear, long before it breaks its confinement, it is affected by the diſeaſe, while externally the plant appears very vigorous. This circumſtance, at any rate, precludes any ſuppoſition of blight being the cauſe of ſmut, and alſo diſproves that ſmut is occaſioned by paraſitical plants or inſects. The one could not grow without the acceſs of air, nor could the latter be produced without ſome apparent injury being done to the plant from without. That the diſeaſe ſhould appear only in the ears of corn, is not more wonderful than that the dreadful conſtitutional malady, the ſcrophula, ſhould be confined to the glands. Until I obtain further information on this ſubject from obſervation and experiment, I ſhall retain the opinion of Dr Coventry as I have ſtated it, and conſider the ſubſtance of ſmut as nothing elſe than the vitiated juices of the plant altering what was intended to form wholeſome grain. This letter has become longer than I intended; but an apology for any thing which may, in the ſmalleſt degree, aſſiſt the object of your Magazine, is unneceſſary to you. I remain, with every good wiſh,

Your moſt obedient and humble ſervant,

*Coul, 18th March* 1804. GEORGE S. MACKENZIE.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Experiments in the Analyzation of Marl.*

*By* SIR GEO. S. MACKENZIE, *Bart.*

SIR,

THINKING that A. S. may be more fully convinced of the truth of what I have already ſtated reſpecting the method of trying the qualities of limeſtone, by being told the uſual proceſſes of a chemical analyſis, and in hopes that many of your readers may be aſſured of the fallacy of rude experiments, in directing them in the purchaſe and diſtribution of lime or marl, I beg leave to ſubjoin the analyſis of marl, (not having limeſtone at hand) which is not given as perfectly accurate, but merely to ſhow ſuch of your readers as may not have ſtudied chemiſtry, the intricacy even in the analyſis of a mineral, whoſe decompoſition requires leſs dexterity than perhaps any other.

Some of the marl being divided into portions of equal weight, and allowed to dry for two days in the air,—on being again weighed, they were found to be of different weights. Hence, it is evident, that the *real* quantity of lime contained in any portion of the marl, can be aſcertained with certainty, *only after the marl has been properly dried.* Attention to this circumſtance is required in preparing any mineral for analyſis.

When thrown upon melted nitre, the marl, in its natural ſtate, detonated ſlightly. But a portion of the marl which had been dried by a heat almoſt red, ſcarcely affected the nitre. Melted nitre may be uſed as a teſt (not a perfect one) for trying the quality of any ſoil, in reſpect to the quantity of carbonaceous matter it may contain. According to the degree of detonation, the quantity of ſuch matter may be in ſome degree judged of.

One hundred grains of the marl, dried by a heat which made the ſides of the crucible barely red, loſt, during their ſolution in diluted muriatic acid, 32 *per cent.* of their weight. 100 parts of carbonate of lime, contain 55 of earth, and 45 of carbonic acid; therefore, 32 *per cent.* of fixed air, indicates 39.1 of lime. This then is the reſult of the proceſs I have recommended in my laſt letter, and it comes very near the truth when cautiouſly gone through. But the reſult of the analyſis, ſhows the marl to contain more lime than this. Therefore, either ſome fixed air was driven off in the drying, or the lime in this marl is not quite ſaturated with the carbonic acid. Whichever of theſe

caſes may occur, it is plain that the real quality of the marl muſt be aſcertained, by ſeparating all its component parts; for which purpoſe, the following proceſſes were employed.

1. 100 grains of the marl, taken from a portion previouſly dried as above, were diſſolved in diluted muriatic acid. Care was taken to allow the acid to be very ſlightly in exceſs. When the effervescence ceaſed, the whole was put into a filter, and the undiſſolved part ſufficiently waſhed with diſtilled water.

2. The filtered ſolution was firſt treated with cauſtic ammonia, which precipitated nothing. The lime was therefore thrown down by carbonate of ſoda, and the mixture was boiled and filtered. The filtered liquor being evaporated to a ſmall quantity, and boiled with ſoda, a ſmall quantity of lime was thrown down. The two portions of carbonate of lime, thus obtained after being properly waſhed, were dried, and then ſubjected to a heat which cauſed the ſides of the crucible approach to redneſs. They weighed together 74 grains.

3. The undiſſolved reſiduum, No. 1. was black, and, when heated in a crucible, took fire as charcoal does. Being taken from the furnace and allowed to cool, it weighed 23 grains. After being ſubjected to a red heat for about half an hour, the inflammable matter was conſumed, and what remained, weighed 21 grains. Having been mixed with three times its weight of dry ſoda, it was kept red hot, in a ſilver crucible for an hour. The mixture was then reduced to powder, mixed with water, and ſuperſaturated with muriatic acid, in which the moſt of it was diſſolved. In order to obtain the ſilex which might be held in ſolution, the mixture was evaporated to dryneſs; then diluted with water, and digeſted. It was then filtered. The ſilex remained on the filter. After being waſhed and heated red hot, it weighed 14 grains.

4. The ſolution which was filtered, had a greeniſh colour. Being ſaturated with carbonate of ſoda, and boiled for a little time, a browniſh precipitate was thrown down. This, after being waſhed on a filter, was digeſted in a ſolution of cauſtic potaſh. Some of it was diſſolved; but a browniſh matter remained, apparently oxide of iron. The cauſtic ſolution was ſaturated with ſulphuric acid, and a ſmall quantity of argil was obtained, which, after being heated, weighed 2 grains.

5. The iron was powdered and put into diſtilled vinegar, that any lime or magneſia might be ſeparated. One grain of lime was obtained.

6. The iron was now moiſtened with nitric acid, heated till dry, and again treated in the ſame way. It was then ſubjected to a moderate heat during fifteen minutes, and afterwards digeſted

geſted in weak nitrous acid. It remained undiſſolved, and weighed 2½.

7. From the acid in which the iron was digeſted, were ſeparated, by ſoda, 2 grains of argil.

The compoſition of this marl, then, according to the above examination, is as under:

| | *Grains.* |
|---|---|
| Lime in 75 grains of carbonate, No. 2. & 5. | 41.25 |
| Carbonic acid - - - - | 32. |
| Silex, No. 3. - - - - | 14. |
| Argil, No. 4. & 7. - - - | 4. |
| Oxide of iron, No. 6. - - - | 2.5 |
| Inflammable matter, No. 3. - - | 2. |
| | 95.75 |
| Loſs | 4.25 |
| | 100. |

The ſubject of the above analyſis was found among the keepings of my deceaſed friend Dr Kennedy, who, in endeavouring to teach me the art of analyſis, ſometimes employed me with ſome ſuch ſimple minerals; and when I was difficulted, he uſed to give me directions how to proceed. The marl now examined, I have reaſon to believe, was given to Dr Kennedy either by Mr Scott of Harden, or Mr Dempſter. If either of theſe gentlemen have any analyſis of Dr Kennedy's, I believe they will find his proceſs pretty exactly followed, and deſcribed, perhaps, nearly by the ſame words; and probably the reſult may be nearly the ſame. I cannot find, among the papers of Dr Kennedy, in my poſſeſſion, any analyſes of marl, although I have the products of ſome proceſſes which he had employed; except a few notes, by which it appears, that one ſpecimen of Mr Dempſter's marl contained 94 *per cent.* of carbonate of lime, 3 of inflammable matter, argil and oxide of iron 2½. In this he appears to have loſt only ½ *per cent.*, which ſhows his extreme nicety. Another marl appears to have contained 55½ *per cent.* of carbonate of lime; and another only 15½.

In making his remarks on the above, A. S. may think he has obtained a victory, as it ſo happened, that all the other matters contained in the marl beſides the carbonate of lime, were left in the ſediment. In this caſe, I yield to him, provided he uſes pure acid; but only till he ſtudies and practiſes the art of analyſis, and knows the difficulties and unexpected occurrences which he muſt meet with frequently.

As I have never uſed lime, and not much marl, in my farm, I

cannot preſume to give any opinion reſpecting the proper quantity of either which ought to be uſed, according to their different qualities. I may venture however to aſſert, that it is better to repeat ſmall doſes of either, than to truſt to one's judgement for aſcertaining the full doſe which in any caſe may be thought neceſſary.

It may alſo occur to A. S., that the impurity of his acid is of little conſequence, when uſed in the proceſs I have propoſed to farmers, as the loſs of weight only is to be noticed. By uſing impure acid, it is more apt to fly off in fumes, than that which is pure, during the extrication of the fixed air; and the extrication cannot be properly effected without the acid being greatly diluted, which occaſions the *menſtrua* to acquire an inconvenient bulk.

I am, Sir, your moſt obedient and humble ſervant,

GEORGE S. MACKENZIE.

*Coul, 10th April* 1804.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On aſcertaining the Quality of Limeſtone.*

SIR,

THE benefits that might be derived from the union of chemical knowledge with extenſive obſervation of agricultural facts, are perhaps incalculable. Your correſpondent A. S. has, in the Number for February, given a method of aſcertaining the quality of lime, which, however, only regards the quantity of ſoluble matter in a given weight of lime or limeſtone. He concludes, 'that the limeſtone which leaves leaſt ſediment when diſſolved, is of courſe the beſt;' I ſuppoſe him to mean, for the purpoſes of agriculture. It is impoſſible to lay down any general rules reſpecting the fitneſs of lime for the purpoſes of agriculture, becauſe much muſt depend on the peculiarities of ſoil, and other circumſtances. All that can be accompliſhed by chemical means, is to aſcertain the degree of purity of the lime, and to infer, from that, to what kind of ſoil it is beſt adapted.

There is one earth, however, lately found in ſeveral limeſtones, which is highly injurious to the vegetation of plants, and is not diſcoverable by ſolution merely, being, equally with lime, ſoluble in muriatic acid. This earth is magneſia, which Mr Tennant, the gentleman to whom we owe this fact, has, by direct experiments, proved to be extremely noxious to plants. The preſence of magneſia in lime, is found to be a very common occurrence. The

The magneſian limeſtone, according to Mr Tennant, may eaſily be diſtinguiſhed from that which is purely calcareous, by the ſlowneſs of its ſolution in acids, which is ſo conſiderable, that even the ſofteſt kind of the former is much longer in diſſolving than marble. It has alſo frequently a cryſtallized ſtructure; and ſometimes, though not always, ſmall black dots may be ſeen diſperſed through it.

To aſcertain, by chemical means, the compoſition of lime or limeſtone, the following is an eaſy and accurate proceſs.

Let 100 grains of lime or limeſtone, well dried, be diſſolved, without heat, in a ſmall proportion of diluted muriatic acid (ſpirit of ſalt.)

If the ſolution contain only calcareous earth, it will give no precipitate with ſolution of pure ammonia (ſpirit of ſal ammoniac.) The phial containing the ſolution, ſhould be inſtantly cloſed, leſt the ammonia ſhould abſorb carbonic acid (fixed air.)

But it will afford a precipitate, when ſulphuric acid (oil of vitriol), or carbonate of potaſh (ſalt of tartar) is added.

If it contain calcareous earth and magneſia, it will give a precipitate both with pure ammonia and ſulphuric acid: this latter reſult is haſtened by evaporation, or a ſlight addition of ſpirit of wine.

Or the lime and magneſia may be ſeparated, by adding moderately ſtrong ſulphuric acid to the muriatic ſolution, as long as any precipitate appears, then heating the ſolution ſlightly, and adding ſpirit of wine. The ſulphate of lime, thus precipitated, being filtered off, and heated gradually to redneſs for half an hour, will then be deſiccated; and of this, 100 grains will contain nearly 39 of lime, which would form 70 grains of deſiccated limeſtone. The magneſia may now be precipated from the muriatic ſolution by carbonate of ſoda (ſalt of ſoda); then dried and weighed. The quantity of each ingredient will thus be found in the ſame ſtate as it exiſted in the limeſtone.

I am yours, &c.

*Yorkſhire*, 1804. TYRO.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On Draining.*

SIR,

I have obſerved in your uſeful Magazine, great attention beſtowed for the purpoſe of aſcertaining the beſt method of draining wet lands; and the ſubject is ſurely very deſerving of it,—as

low lying lands, particularly of that deſcription, when effectually drained, are a great acquiſition, the greateſt part of them being of the beſt quality, or capable of being made ſo. I ſee, however, by your laſt Nnmbers, that the matter ſtill remains in a great meaſure a deſideratum. I ſhall therefore trouble you with a few thoughts upon the ſubject.

The general method hitherto practiſed in the cutting of drains, is, to throw up the earth on one or both ſides of the drain; which, in my opinion, is a great miſtake. In this method, the weight of the ſuperincumbent earth renders the ſubſtratum more ſolid, and conſequently more impervious than it was before, and therefore water collected on the back of it, after a fall of rain, or the overflowing of a brook, is much longer in running off than it would otherwiſe have been. I once obſerved a drain cut alongſt the loweſt ſkirt of a meadow, to contain the waters of a ſmall burn or brook, that had formerly run in a natural courſe, much in the ſame line. In forming this drain, all the earth was thrown upon the meadow ſide. The conſequence was, that the meadow was nearly rendered uſeleſs, by the water, after heavy falls of rain and the overflowing of the brook, ſtagnating upon it almoſt the whole year round. It remained ſo for upwards of twenty years, until the courſe of the burn was turned another way.

What Mr Elkington's method of draining is, I have never heard nor ſeen deſcribed; nor does the perſon, who gives an account in your Magazine, of his draining a large moraſs, mention his method; if he had done this, it might have been of great advantage, as operations of that kind can only be carried on with ſucceſs during the ſummer ſeaſon.

The beſt method I have ſeen, and which I obſerve practiſed on the farm of *Auchencreath*, a little north of this place, on a piece of wet level ground, ſubject to be overflowed, is, by cleaning all the furrows, after ſowing, into the furrow of the head-ridge, which runs parallel with the ditch. The head-ridge furrow is well cleaned up; and ſeveral cuttings are made from it through the ridge and bank into the drain. This mode, however, has its inconveniences. Clods of earth are continually falling into the furrows, waſhed down by heavy rains, or the action of the water by the wind, if it is in the leaſt overflowed. The water, thus prevented from running off, ſtagnates in the furrows, and keeps the ridges wet; for the water, in moſt ſoils, is apt to riſe even higher in the ridge as in a ſpring, than its ſurface in the furrow, to the great detriment of the plants, eſpecially in cold froſty weather; and, from the multiplicity of concerns relating to a farm, the clearing of the furrows is moſt frequently overlooked until irreparable injury is done.

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The mode of draining I would propoſe, may, in the firſt inſtance, be moſt expenſive; yet if it ſhall be moſt effectual, attended with leſs trouble and expence afterwards, and its effects permanent, a complete reimburſement will be made in a few years, and the advantages likewiſe permanent.

In the *firſt* place, let us ſuppoſe a piece of low wet land, conſiſting of a few acres. If it has any inclination, it is obvious the drain muſt be formed on that ſide which is loweſt; always ſuppoſing, however, that the ſituation of the ground is ſuch as to admit the water to be conveyed away into ſome other drain or brook. But probably I ſhall be as well underſtood, by ſuppoſing a ditch has been already drawn in the old form, alongſt the loweſt ſkirt of ſuch a piece of land. In the ſummer ſeaſon, then, as ſoon as the piece of ground is ſo dry as to admit of it, I would begin at 8 or 10 feet diſtance from the ſide of the ditch, and pare off the earth, ſloping it down gradually to the depth of 2 feet or 2½ feet at the brink of the ditch; and ſuppoſing the ditch to be 3 feet or 3½ feet deep, the remaining foot may be left to contain the ordinary water. The earth thus pared off muſt be carted into hollow places (if there are any) in the field. If the ſurface is even, it muſt be laid on (as far as it goes) thicker and thicker the farther from the drain, to increaſe the acclivity; and in ſo far as it does this, it is manifeſtly of the greateſt advantage. After having proceeded this way alongſt the whole courſe of the ditch, it is then finiſhed, in ſo far as it is intended only for a drain. In ploughing, it certainly will occur to every one, that the ridges muſt on no account be drawn parallel to the ditch, but at right angles with it, the ends of the ridges terminating preciſely at that part where, in paring off the earth, the declivity begins. By this means, the water has not only a free and immediate deſcent from the furrows into the ditch, but the water drains more freely from the ridge itſelf, when ploughed in that direction, than when ploughed acroſs the deſcent.

*Secondly*, Suppoſing a field perfectly level, or having a ſmall deſcent on any two of its oppoſite ſides. In either caſe, a ditch or drain ought to be made on each of theſe ſides, and the earth taken out of them diſpoſed of, as before directed, by ſpreading it over the middle of the field. And as every advantage ought to be taken to heighten the ſurface; in the firſt ploughing, the whole field ſhould be gathered up into one ridge, parallel with the drains; which may be repeated every time the land is broke up after graſs, and then ploughed acroſs, between drain and drain, for ſowing. The declining border, which ſhould form the head-ridge, ought never to be ploughed. But it is not therefore loſt. It may be prepared and laid down the firſt year with

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rye-graſs, that it may gain a ſwarth the ſooner; and, if not ſubject to be overflowed, may be very valuable as a graſs bank for cutting in ſummer. According to the above plan, we apprehend, a bog or moraſs of 1000 acres may be effectually drained, by cutting one principal drain through the middle of it, or that part which appears loweſt; planning out the ground on each ſide of it into corn fields, as ſmall as may be convenient; and forming the drains between them, that fall into the main drain, in the manner above directed.

*Thirdly*, If a plot of land is large enough to admit of being divided into two fields, a fence will be neceſſary between them. In this caſe, the fence may be formed in making the drains on each ſide; breaking ground at 2 feet diſtance, and ſloping it down to 3 or 3½ feet width at bottom; laying 2 feet of earth upon the top, which will make the fence between 4 and 5 feet high; and, though ſoft at firſt, will turn more ſolid when dry. Planting a thick row of ſaughs near the bottom, on each ſide, will both ſtrengthen and add to the fence. They can eaſily be procured, and will generally thrive in ſuch ſituations. Should a cart-road between two fields be neceſſary, the ſame method is to be obſerved, leaving the proper ſpace. It is needleſs to make any more obſervations, as what has been ſuggeſted is ſufficient to direct in any modification with regard to ſituation or figure. There are large tracts of wet moſſy ſoil in the higheſt part of the interior, occupied only as ſheep farms, the climate abſolutely prohibiting all idea of raiſing crops, which I think might be greatly ameliorated, even for the purpoſe for which they are occupied: At leaſt the following experiment might be made. Drain a field according to the foregoing method, if it is level; if it has conſiderable inclination, with rumbling fivers. Then, in the heat of ſummer, when the land is dry, ſpread it over thick with what vegetable ſubſtances can be procured in greateſt quantity, bent or bulruſhes; let them be ploughed deep into the ground, and harrowed: There is a great probability that a fermentation will ſucceed, which, together with the drying of the ground by draining it, may ſo far alter the nature of the ſoil, as to make it produce excellent graſs either for hay or paſture.

There are almoſt in every farm ſmall pieces of land, in the ends and corners of fields, which, from the lowneſs of their ſituation, are very wet, and from which the water cannot be conveyed away, on account of intervening riſing grounds, or other obſtacles. Theſe places, though the beſt of the ſoil, are always loſt, being generally overlooked. But if they were all added together, they would probably make a larger

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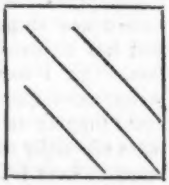
total of loſs to the country than is imagined. As rumbling ſivers would be of no uſe here, the only method of drying theſe places, is, by digging a pond of two or three feet deep in the loweſt corner, proportioning the ſize of it to that of the plot or quantity of water generally collected upon it. And although the ſize cannot at firſt be aſcertained, it will be better to make it rather ſmall as large; as, ſhould it anſwer, no land is then loſt. If too ſmall, it can be enlarged; removing the earth that is dug out of it to the upper part of the wet ſpot, for this is never to be loſt ſight of; and making a ſmall cut alongſt the loweſt ſide into the pond.

There are on many farms, particularly in elevated ſituations among riſing grounds, ſpots in the form of a baſon, which are commonly filled with water during winter, and in rainy ſeaſons; and they will be more or leſs ſo as the riſing lands around them are more or leſs extenſive. They are always loſt; and as many of them are on hard bottoms, their recovery would be a conſiderable acquiſition to farms of this deſcription. To hazard any thing more than mere ſpeculation, on a ſubject that has hitherto been thought deſperate, would be preſumption. But I have many times obſerved, in dry weather, the water more quickly to diſappear from off ſuch parts, than I could ſuppoſe to have taken place only from evaporation; the more eſpecially as, even during that period, there behoved more water to have fallen into them from the circumjacent grounds, than I could have ſuppoſed to have been evaporated by the heat of the ſun and air. This ſhows that the water found its way by draining through the earth, in conſequence of the elevated ſituation of the baſon. In ſuch places, therefore, where the elevation is conſiderable, this experiment might be made. In the middle of the baſon dig a pit 5 or 6 feet diameter, carting the rich mould on the top to ſome poor piece of land. Let the pit be dug 5 or 6 feet deep, or until a ſtratum of ſand or looſe gravel is come at, but not deeper than 8 feet; then fill up with ſtones, covering them pretty thick with ſtraw before the earth is put over them. Such a conſiderable body of water, in immediate contact with the bed of ſand or gravel, may probably force a paſſage through it in ſome one or more directions; by which the diſcharge may be in ſome meaſure equalized with the influx of waters from above; at leaſt in the ſummer ſeaſon. But in ſituations where the bottom of the baſon is on a level with the ſurrounding plain, ſuch an operation would be as impracticable as unſucceſsful. Even ſuppoſing the baſon dry in ſummer, a pit ſunk here would infallibly bring up water. Suppoſing, however, the above ſcheme ſhould not ſucceed, ſtill it would be better

ter to compound the matter than loſe the whole. A pond might be dug in the middle, 3 or 4 feet deep, and in ſize about a fifth or ſixth part of the area of the baſon, which would contain all the ſuperfluous water; the reſt would be dry, and fit for culture.

There are likewiſe a great many lands in this country that have a conſiderable deſcent, and yet, on account of ſprings, and the retentive quality of the ſoil, or other cauſes, are continually very wet. Such are a great many moor lands, particularly thoſe of Clydeſdale and Ayrſhire. This continual wetneſs keeps the land perpetually wild and unproductive. I know no better remedy in ſuch caſes than rumbling ſivers. In ſome parts of the country, however, ſtones neceſſary for forming them, are either not to be had at all, or not in ſufficient quantity. If the farm does not furniſh ſmall ſtones, probably large ones can be had, which may be broke; and in this caſe the moſt compendious method muſt be uſed. Probably three diagonal ſivers in a field that has conſiderable declivity, and a plain ſurface, as in the annexed figure, whereof A is the moſt elevated ſide, will have as much effect as treble the number drawn right up and down; and as ſuch lands either are, or always ought to be, enclоſed with hedge and ditch, the lower ends of the ſivers will enter the ditches. But if ſtones cannot at all be had, the land ought not to be loſt; the beſt ſubſtitute that can be had muſt be uſed. Probably bruſh-wood can be got, or if that cannot, ſtrong heather pulled up by the roots may. The firſt layer ſhould be of the ſtrongeſt heather, placed lengthwiſe in the bottom of the ſiver; the ſecond layer of finer heather laid acroſs it, the better to ſupport the earth; above that, ſods, with the green ſide undermoſt, jammed between ſide and ſide archwiſe. This may have ſo good an effect in moſt caſes, and for ſuch a length of time, as ſhall amply reimburſe the expence, and, in many, prove an effectual remedy, by keeping the land dry, until by culture its nature is totally changed.




Having laid before you this project, I confeſs that I am not over-ſanguine in regard to its adoption. The trouble and expence will no doubt be conſiderable, and the work could only be practicable, in wet boggy lands, during a dry ſummer ſeaſon; but then this is the ſlackeſt ſeaſon of the year with the farmer. At the ſame time, the proſpect of ſucceſs is, I think, conſiderable, from the two principal objects the project holds out, viz. raiſing the land backwards from the drain, by ſpreading

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ing over it the earth dug out, and likewiſe laying it up with the plough; whereby thoſe parts fartheſt from the drain, being more elevated, will be rendered thereby more dry; and thoſe parts next to it, will be likewiſe kept dry, by the free and ready conveyance that the water finds from the field. There are ſeveral very valuable fields in the farm above mentioned, and in the vicinity of it, that would eaſily admit of the experiment, and I am perſuaded with ſucceſs.

Should you deem this worthy of inſertion, I ſhall at leaſt hope that it will either provoke a juſt and ſatisfactory criticiſm, or be the means of procuring from ſome of your more intelligent correſpondents a preferable plan. I am, Sir, your moſt humble ſervant, J. C.

*Dumfries, May 9th*, 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On a Suitable Rotation of Crops.*

SIR,

I BEG leave to offer, for inſertion in your Magazine, ſome deſultory thoughts on the rotation of crops.

A ſuitable rotation of crops is unqueſtionably a very important part of huſbandry; and though an adequate knowledge concerning it be ſeemingly of very eaſy attainment, yet, in fact, no ſmall degree of judgment and experience is neceſſary, ſo to arrange the ſyſtem of cropping, and to adapt it to the varieties of ſoil and climate, that the greateſt poſſible produce may be obtained. It is, indeed, a very eaſy matter to follow a courſe of alternate white and green crops; but very little obſervation will ſerve to convince one, that this general rule may be very ſtrictly obſerved, and yet the ſyſtem of cropping practiſed may be very defective. Indeed, ſo prominent a place does the judicious arrangement of crops poſſeſs in the agricultural art, that I cannot think of any better criterion for eſtimating the merits of a farmer, than the courſe of cropping he has adopted. It has therefore occurred to me, that occaſional diſquiſitions on this ſubject may not unuſefully occupy a place in your widely diffuſed Magazine. I have ſometimes amuſed myſelf with calculating the probable value of produce from the crops of different rotations, in order to find out the moſt profitable amongſt them; but ſhall not trouble you with theſe calculations at preſent. My intention, at this time, is to mention

mention ſome of the moſt approved ſyſtems; to ſay a few things with regard to their peculiar excellences; and, laſtly, to recommend a change of ſyſtem in the ſame farm, on the very plauſible hypotheſis, that 'nature delights in variety.'

I ſhall begin with one ſyſtem of cropping, which, in my opinion (where ſoil and climate are favourable), comes as near perfection, as any that can be adopted. It is practiſed very generally in this county, on deep loams near the ſea coaſt, where the turnip crop forms a part of the rotation; and likewiſe by ſome good farmers, on ſuch ſoils as indiſpenſably require ſummer-fallow in place of turnips. The ſyſtem I mean is as follows: 1ſt, Summer-fallow, or turnips, according to the ſoil: 2d, Barley: 3d, Graſs: 4th, Oats: 5th, Drilled beans, or peas: 6th, Wheat, which finiſhes the rotation. It may be objected to this method of cropping, that by placing the moſt valuable of all grain crops, to wit, wheat, in the back ground, and barley, the moſt precarious, and now the leaſt advantageous of all white crops, in front, the cultivator will thereby derive leſs profit, than by reverſing this practice; or rather by rejecting barley altogether, and making a crop of wheat to ſucceed both fallow or turnips, and likewiſe the bean or peas crop. It muſt be admitted, that this objection has peculiar weight, now when barley does not hold its uſual place in the ſcale of prices: But it is to be hoped, that either ſomething will be done by our legiſlators to remedy this evil; or, like ſome other evils in political economy, it will work its own cure. Inſtead, therefore, of attempting to combat this objection, I will proceed to point out ſome of the excellences of this rotation. The moſt prominent certainly is, the equal diſtribution of farm labour; ſo that the ſowing of each kind of grain follows another in regular ſucceſſion, thereby enabling the farmer to execute all his operations in the beſt ſtyle. When a crop of wheat is invariably taken after ſummer-fallow or turnips, it will often happen, from the poaching of the turnip-land, and its not being in all ſeaſons practicable to pulveriſe the ſoil ſufficiently, by repeated ploughings for the reception of graſs-ſeeds, that a failure of the graſs crop will frequently be the conſequence: whereas, by ſowing barley in place of wheat, the farmer will have ſufficient time to beſtow ſo much labour as is neceſſary to correct the evil, and to prepare a proper bed for the tender roots of the graſs-ſeeds; and thus, a derangement of his plans will be prevented—a matter of no ſmall importance in agriculture. Again, on clay ſoils, it will not ſeldom happen that, on account of wet ſummers, the farmer will be prevented from working his fallows ſo completely, as to enable him to ſow winter wheat with propriety, if he means to follow his uſual rotation; in which caſe,

caſe, the beſt method he can have recourſe to for rectifying the defects of his fallow, is to plough it again in the ſpring, which, it is plain, cannot ordinarily be done in time for wheat; therefore barley or oats muſt be ſown in its place. But, after all, though the above rotation poſſeſſes, in my judgment, many advantages, yet, as was before obſerved, ſuch is the preſent comparatively reduced price of barley, that ſcarcely any prudent farmer will think of cultivating it to the extent he was formerly inclined to do, until the price again finds its due level. Beſides, it muſt be obſerved, that on the generality of ſoils, the rotation I have ventured to recommend cannot be with ſafety adopted; for, except on deep loams, naturally rich ſoils, or ſuch as are under the beneficial influence of lime, it will almoſt invariably be adviſable to ſow wheat after fallow, or even oats, in preference to barley. I ſhall now therefore mention another rotation, which is, I believe, more extenſively adopted than the laſt; and that is, 1ſt, ſummer-fallow; 2d, wheat; 3d, graſs; 4th, oats; 5th, drilled beans, or broad-caſt peas; 6th, wheat, or oats. This rotation is perhaps as judicious as any that can be choſen upon wet clay ſoils; barley being wholly excluded, as a very precarious crop, eſpecially if ſuch have not been lately limed. The moſt obvious diſadvantage attending this rotation ſeems to be, that when, from wet ſummers, or from want of due exertion, the fallows have not been perfectly cleaned, the land gets very foul before the rotation is completed; and, of courſe, the crops turn out unproductive.

The judicious and experienced farmer will therefore be induced to deviate from this method of cropping, when, from whatever cauſe, he obſerves that his fallows have not been ſo completely dreſſed, as to render it prudent to ſow graſs-ſeeds among his fallow wheat, and will rather take a crop of drilled beans after the wheat, and, by beſtowing ſome extraordinary labour and attention to the cleaning of it, endeavour to rectify, in ſome meaſure, the defects of his fallow; and then either conclude the rotation, by taking another crop of wheat; or, when decent barley may be expected, to take a crop of that grain after three furrows; next graſs-ſeeds, and then oats.

A rotation of eight crops has been ſucceſsfully adopted by ſome excellent farmers, and is as follows: 1ſt, Summer-fallow; 2d, wheat; 3d, drilled beans; 4th, barley; 5th, graſs; 6th, oats; then, after dunging, 7th, drilled beans; 8th, wheat. I am inclined to think, that this rotation is a very good one, on ſuch rich clays as are favourable to the culture of beans, or where the farmer has it in his power to apply more manure than the farm itſelf produces; but it certainly cannot be very generally adopted.

I will therefore mention another rotation, in which paſture graſſes are introduced; and though, I believe, it is but ſeldom followed, yet I can ſay from experience, that I have tried it more than once, and not without ſucceſs: 1ſt, Fallow; 2d, wheat; 3d, graſs; 4th, oats; 5th, drilled peas and beans; 6th, barley, after four ploughings; 7th, paſture; 8th, paſture; 9th, oats. I know very well, that this rotation will be reprobated by ſome agriculturiſts, becauſe the paſture graſſes are ſown at too remote a period from the fallow and dung; and conſequently, the benefit to be derived from them will be thereby conſiderably leſſened. I will not attempt to defend this ſyſtem from every objection; but ſhall only obſerve, that the farmer may ſometimes find it neceſſary to adopt ſuch a rotation on a part of his lands, from particular circumſtances, which not unfrequently occur in the management of a farm conſiſting chiefly of wettiſh ſoil; and I am of opinion, when a few years paſture are intended, that the ſowing graſs-ſeeds among wheat is not ſo proper as with a crop of barley. There can be no objection againſt ſowing them with wheat, when only one year's cutting or paſture is intended; but for two or more years paſture, I have no heſitation in ſaying, barley is the beſt crop to ſow down with. I am likewiſe inclined to hazard the aſſertion, that when the land is ſown down with fallow-wheat, and afterwards paſtured for three or four years, the farmer will often find it neceſſary to ſummer-fallow again after his lea-oats.

A great many more rotations might be mentioned, ſtrictly compatible with the well known law in modern huſbandry, 'not to have two culmiferous or white crops in immediate ſucceſſion,' which the judicious farmer will revolve in his mind, ſo as duly to appreciate their merits. But perhaps what I have already written is long enough, both for the reader and the writer. However, I flatter myſelf, it may be a means of exciting others of greater ability to turn their thoughts on the ſubject. I will therefore conclude, with recommending a change of the ſyſtem of cropping on the ſame farm, and I have no doubt the farmer will find his account in it. Suppoſing, for example, that the rotation has been, 1ſt, fallow; 2d, wheat; 3d, peas or beans; 4th, barley; 5th, graſs; 6th, oats.—Let another rotation be followed, where graſs is ſown among the fallow crop; and, in order to diverſify the ſyſtem of cropping as much as poſſible, it may not be improper ſometimes to take oats after fallow without dung, and apply dung to ſome of the ſucceeding crops. I remain, Sir, your conſtant reader, and a friend to your publication,

*Eaſt-Lothian, February* 1804. OBSERVATOR.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Thoughts on Turnpike-Roads and Road Acts.*

SIR,

IT appears to me that distinct, clear, and correct ideas of a toll-road are seldom to be met with amongst road trustees. A toll-road is one that, by a particular statute, is ordained to be made, and kept up from funds leviable by that statute, and has nothing to do with any other funds whatever. If support is drawn from any other source, it is not properly a toll-road. All conversions for statute services (as money in place of labour performed by our late road laws) it has nothing to do with. The money arising from such conversion is, by all laws hitherto existing, the property of the parish it is levied in, and applicable only to the by-roads within that parish. No road ought to be declared a toll-road, but such great lines as go through several parishes. The conversion money ought to be appropriated to the making of the by-roads within its own parish, or, in other words, to the roads leading to the great or toll-roads, from different parts of the parish. This, I humbly apprehend, is a pretty clear and distinct idea of the two sorts of roads, and of their respective funds, viz. toll-money of the one, and conversion-money of the other; and betwixt these funds there ought to be no connexion or interference. The toll funds are a *cumulo* sum levied from bars erected at different parts of a great line of road, and to be laid out as the statute directs, by which such line is declared a toll-road. The conversion money is a fund merely for making internal parish roads, by which the inhabitants are to get to the toll roads. If the parish money is thrown into the toll funds, and made a *cumulo* sum, and little or nothing allowed, on various pretences, for by-roads, great injustice is done the proprietor and his tenant; because, though they pay toll equal to every one else, they pay conversion-money also, without having access to the toll-road. Where nothing is allowed for the parish roads, that parish ought to pay no conversion-money. Why should the possessor of land pay more than any other, and at the same time be in a worse situation? This, however, is exactly his situation, when his conversion money is made a *cumulo* sum with the toll-money, and the whole applied to the toll-roads, or to pay the sooner the money at first subscribed to make them.

There may, however, be roads necessary, and passing through more parishes than one, on which tolls would not yield money sufficient to answer the idea above given of a toll-road, of main-

taining itſelf. Theſe ought to be left out of the nomination of toll-roads, and conſidered as by-ones, till ſuch time as the trade upon them will afford funds ſufficient to put them on the toll eſtabliſhment; each reſpective pariſh making its own part thereof from the converſion-money, till that is the caſe. It appears evident, that to apply pariſh money to any purpoſe, but within its own bounds, or even not to declare any line of road running through more pariſhes than one, a toll-road, as ſoon as it can afford to be ſo, is evidently unjuſt to the land poſſeſſor, and taxing him higher than any body elſe. A toll is an equal tax, becauſe every one pays in proportion to the uſe he makes of the road; and therefore, where there is a deficiency of funds for making or upholding a road, it is much fairer to increaſe the tolls, than lay it on the landholder, by raiſing the converſion-money by a new act of parliament, which has ſometimes been done. In ſome counties, diſputes have ariſen about the application of the two funds before mentioned, owing to thoſe concerned not having a clear and diſtinct idea of their nature; conſequently, their road acts are, in ſome inſtances, confuſed, contradictory, and unintelligible. The following ſeem to be the main points to be agreed upon, and perfectly equal and fair.

The great toll-roads ought to have their whole toll-money in a *cumulo* ſum, levied at ſuch places, and laid out on the whole line, as the truſtees ſhall think beſt for the public benefit.

The ſecondary ſort of toll-roads are thoſe which may require ſome aſſiſtance from the pariſh money, and ought to draw ſuch aſſiſtance from the different pariſhes they paſs through, in proportion to their length in each, until the tolls enable them to rank among thoſe of the firſt claſs.

The third ſort of roads, is the real internal pariſh roads, which ought to have, in preference to all others, the converſion money applied to them ſolely, unleſs where it may be thought for the public good to lend ſome aſſiſtance to the ſecondary roads, and that only with the concurrence of thoſe having the direction of the pariſh money, and within the pariſh only. As to the qualification of truſtees, there have been different opinions; but this, I believe, is now generally agreed upon. Some were for a ploughgate of land in property, and others for 100l. Scots as the rule. There is no doubt, that a perſon appointed by the laws of the land to lay on a land-tax as a commiſſioner of ſupply, has a complete right, by analogy, to be a truſtee, becauſe the former muſt be conſidered as the greateſt truſt of the two. But I cannot ſee how the commiſſioners of ſupply can exclude a ploughgate proprietor, when met to concert a road-bill, more than a man of 200, 400, or 1000 pounds Scots valuation, can exclude the

the commiſſioner of ſupply, which ſeems now the rule in truſtee making. At any rate, the pariſh money ought to be entirely under the management of the proprietors and farmers of the pariſh, who generally will be found excellent truſtees, reſiding on and farming their land, and up to every neceſſary kind of knowledge for executing the truſt; more ſo, often, than the great proprietors reſiding at a diſtance, or thoſe taken up with very different purſuits.

Gentlemen, I wiſh the foregoing, or ſomething like it, to appear in your next Number; for you are at full liberty to uſe the file as you pleaſe. You may either eke, pare, or burn. I am your ſincere friend, and conſequently a friend to my country,

*February* 1804. FLAMINIUS.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Extirpating Whins and Broom.*

SIR,

EVEN ſmall matters are not below the notice of attentive agriculturiſts; and though the ſubjects I now write upon, ſeedling plants of whins, or furze, and broom, be in themſelves ſmall, their conſequences are far from unimportant. 'A ſtiek in time, ſaves nine,' ſays an old Scots proverb; therefore, I hope the trifling attention recommended in the following ſlight communication, may be found really to ſerve the huſbandman very materially. The practice which it is meant to exemplify and recommend to others, originated with me from another old proverbial ſaying,

'How broom, hae broom;
Pow broom, nae broom.'

A few years ago, I improved, by turnip fallow, lime, and dung, a dry field on my farm, much overrun with the above ſhrubs. Immediately after the turnips, eaten by ſheep on the ground, the field was ſown up in graſs with the barley crop, and ſucceeded to a wiſh. Numberleſs ſeedlings of whin and broom, however, made their appearance in the ſtubble; many of which I pulled up during harveſt. As my intention was, to reſtore fertility to a piece of land that had been long ruinouſly overcropt, I paſtured with ſheep the firſt year; and ſoon perceived the graſs to be infeſted with vaſt quantities of whin and broom plants. As my ſmall flock of ewes and lambs were paſtured in that field, it became my daily reſort; and almoſt every day,

I amuſed myſelf, more eſpecially after rain, with pulling up the young plants. This happened laſt year, 1802; and, being tolerably diligent, I was ſo fortunate as not to leave, as far as I know, one plant behind; for in all my walks this year, 1803, in the ſame field, and uſed for the ſame purpoſe, I have never been able to find a ſingle plant. The graſs continuing excellent, I mean to paſture a third year; and afterwards to throw it into the general rotation of my farm. I certainly do not expect, next time it is thrown into graſs, to find this field free from whins and broom; but I ſurely expect to find the numbers of theſe plants much diminiſhed; at leaſt, I have prevented, with certainty, any additional ſeeds being communicated to the ſoil.

I happen to be in a proverbial humour, and beg leave to recommend, to the attention of my brother farmers, an old ſaw:

'Once ſeeding cauſes ſeven years weeding.'

This is a text upon which many excellent agricultural ſermons might be compoſed; and, for one of theſe, the ſubject of this apparently unimportant communication is no bad illuſtration.

From my own perſonal experience, in the field of which I now write, I am perfectly ſatisfied that a child of ten years old is capable, in a very few days, after a good ſoaking rain, to pull up as many ſeedling plants as uſually grow upon twenty acres of land. After the land is brought into that ſtate of fertility as to undergo a regular rotation, along with the reſt of a tillage farm, this practice may not be ſo neceſſary; as tillage, eſpecially the fallow break, will undoubtedly kill theſe ſeedlings, before they can run up to ſeed. But I will now venture to lay down the foulſt whinny or broomy knoll in Britain, into permanent graſs; and free it, with certainty, from whins and broom, in two or three years, for half a crown the ten acres.

*Merſe, November* 1803. *R. r.*

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Steeping Wheat.*

SIR,

OBSERVING, in laſt Magazine, a paper 'On the Smut in Wheat,' ſigned A. S., wherein the author, after quoting an experiment by Sir John Call, concludes with an opinion, that waſhing or pickling is no remedy againſt this baneful diſorder; —In contradiction of which, I can, from nineteen years experience, avouch, that I ſcarcely ever ſowed the end of a ridge with dry

dry (for want of ſteeped) ſeed, without its being tinged with ſmut; while, by ſteeping the grain, I never had a particle worth notice.

The practice, where I reſide, is to obtain, annually, from Mark-lane (at an extravagant price no doubt) as many quarters of Eſſex or Kentiſh ſeed as are likely to yield ſufficient increaſe for the number of acres to be ſown the following ſeaſon, and to avoid any in the ſmalleſt degree hurt with ſmut; to dreſs the ſeed remarkably well; and, in the evening before ſowing, to pour it ſlowly into caſks three fourths full of ſea water, ſtirring it about, and ſkimming off all the light grain. Among this water it remains during the night; and, next morning, is *dript* in carts, and ſown, after being mixed with as much ſlacked lime as make it part. This, to any perſon who, among his neighbours, can obtain a ſufficiency of caſks, and not a great way from the ſea, is by no means an expenſive proceſs; as the ſame water, except what the wheat imbibes, may be kept, and uſed for a ſecond and after ſowings. The practice is attended with this further advantage, that while grain, ſo ſteept, will, to a certainty, vegetate ſooner than if ſown dry, or when ſprinkled with urine, it is in no danger of having its vegetative powers deſtroyed, admitting it remains among the ſea water for ſome days, ſhould the ſowing be impeded by froſt or rain.

W.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Scooping Potatoes for Seed.*

SIR,

HAVING often heard your quarterly Publication, 'THE FARMER'S MAGAZINE,' recommended as containing much uſeful information in agricultural concerns, I was induced, a few days ago, to purchaſe the two laſt years publications; and muſt in juſtice ſay I am not diſappointed. There is one caſe, however, treated of by a number of your correſpondents in 1802, which, I am aſtoniſhed to find, differs ſo far from the practice I have had; I mean, ſcooping the ſeed from the potato. From all the information I have ſeen in your publication, there is only one inſtance where it is ſaid the ſcooped ſeed was a good crop, viz. at Powderhaugh; and your correſpondent A. S. is not certain but the crop might have been better, had the ſeed been cut in the ordinary way.

In ſpring 1801, when the circumſtance of ſcooping out the eye came to be firſt talked of, I conſidered the ſubject with particular attention, and was ſo far convinced of its utility, that I planted upwards of three acres with ſcooped ſeed; and ſaved nearly two thirds of the whole weight.* My expectations were fully realized; for I had an excellent crop, ſomewhat more than ſixty bolls per Scots acre, weight 42 lib. Engliſh per peck.

I planted only a few cut in the common form, to ſee if there was a difference or not; and, if a difference, whether it was in favour of ſcooping, or common cutting; and the conſequence which followed, made me conclude in favour of the former.

My ground was prepared in the ordinary way; was three times ploughed; and drilled at the diſtance of 2½ feet, the dung being ſpread in the drill along with the ſeed. I have continued to cut all my ſeed in that way ever ſince; and though my crops have not theſe two laſt years been ſo prolific, it is owing to the ſeaſons, not the ſeed; for they were not inferior to thoſe of my neighbours. Having ſaid ſo much in favour of ſcooping out the eye, contrary to what has been repeatedly reported, it will be neceſſary to ſtate where, or upon what grounds I found my argument; which I ſhall do in as few words as poſſible.

Every perſon will allow, that there are ſmall fibres connected with the germ—ſo imperceptibly ſmall indeed, that ſome of them cannot be diſcovered with the naked eye—which are the cauſe of vegetation. Theſe ſmall fibres ſpring from the centre of the potato. The greater the length of thoſe fibres that can be preſerved, or left attached to the germ, there is the more certainty of the plants taking root in the ſoil; and I do inſiſt, that the dormant part of the potato, abſtracted from the germ and its appendages, can have no effect on its vegetative principles. Like all other ſeeds committed to its parent earth, that part which is not of a vegetative nature very ſoon decays, and leaves the plant, in its earlieſt infancy, to be nouriſhed and brought to perfection by the ſame cauſes which produce vegetation in every other ſpecies of plant.

Take, therefore, two potatoes of equal ſize, ſay 2½ inch in diameter. With the ſcooping inſtrument deſcribed, take ſix ſeeds from the one; with a common knife, take ſix ſeeds from the

* I uſed inſtruments for cutting, of different conſtructions; but the one I moſt approve of, is made in form of a punch ſpoon, ⅞ inch wide, ½ deep, rather narrow to the bottom. With ſuch an inſtrument, you will eaſily cut out the ſeed ⅞ inch deep.

the other; and you will find thoſe taken out with the ſcooping inſtrument go much nearer the centre, than it is poſſible to do by means of the common knife. If ſo, I hope my argument is fully proved. I am, &c.

*Netherplace, 24th Jan.* 1804. R. H.

*P. S.*—It occurs to me, that conſiderable improvement might ſtill be made in the mode of ſtraighting ridges. I ſhall, however, defer ſaying any thing on that or any other ſubject, till I ſee if you look upon what is already written as common ſenſe: beſides, I am afraid I have already intruded upon your time.

R. H.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Obſervations on the Fen Huſbandry of Cambridgeſhire.*

SIR,

I HAVE taken in your Magazine from its commencement, and think it an object of national utility, and well deſerving of all the encouragement which it has obtained. I thought to have been your firſt correſpondent from theſe parts, and had in ſome degree prepared materials for that purpoſe; but buſineſs of more immediate importance delayed the forwarding of them, until a perſon, at Chatteris, I find, has got the ſtart of me.

This correſpondent has ſent you a ſtatement of the annual rotation of fen lands, and average produce thereof, ſo far calculated to miſlead, that I think it an object of ſerious conſequence it ſhould not paſs unnoticed and uncontradicted. In the *firſt* place, in ſtating the value of *coleſeed*, * it is certainly very improper to ſet down the higheſt price that could be obtained for a particularly good crop, in the deareſt year that ever was known. It is true, that the crops of laſt year were not on an average; but, on the contrary, very much below it. It is no new doctrine, that ſcarcity begets high prices: however, the direct cauſe of the dearneſs of coleſeed, the laſt ſeaſon, was the exceſſive drought and ſhortneſs of the paſtures, at ſo late a period of the year, that there was no proſpect of keeping ſheep in a tolerably good condition in the fens

 without

* The *rape* plant, provincially called *coleſeed*, when a green crop, though improperly, is ſometimes curtailed, and called *cole*.

without it; and turnips in the high country were dear in proportion. Notwithſtanding all this, I believe the *average* price of coleſeed, laſt year, in this diſtrict, did not exceed 4l. The neighbourhood of Chatteris will by no means ſerve for a true medium of the fens in general (the land there being deeper and richer than many other fens); though, even in that neighbourhood, ſome graziers from a diſtance bought good *average crops* at 4l. and under. A number of facts in this particular came within my own knowledge; even there was coleſeed, laſt year, ſold in the neighbourhood of Chatteris, ſo low as 30s. per acre.

The anſwer to the *ſecond* query is equally vague and deluſive. The crop *commonly produces* from 30 to 42 buſhels per acre; 84 buſhels is a produce which I never heard of; and, though it may be believed in Scotland, it will gain very little credit in theſe parts. The gentleman's object (who is clearly not a practical agriculturiſt) ſeems to be, to adviſe the cultivation of coleſeed. As a green crop, it is certainly a *valuable* object; but he ought to have added, that it will ſucceed only on fen land, or a rich loam that lies low. I have ſeen attempts made to raiſe it on uplands; but they have generally failed. Another thing he ought by no means to have omitted, is, that if ſuffered to ſtand for ſeed, it is ſo exhauſting a crop, if a full one, or makes the land ſo extremely foul with weeds, if not, that it is totally interdicted by the proprietors of ſeveral large eſtates hereabouts.

The remaining *items* of the *annual rotation* are completely miſtated, where any ſyſtem prevails. It is true, that there may be, here and there, a ſmall piece of land (which muſt have for many previous years received a great deal of manure beyond its ſhare), that might bear ſuch a rotation once in half a century; but, to give ſuch an account as a general rotation of fen lands, and ſuch an average of produce, is altogether without foundation. Surely the gentleman does not mean to inſinuate, that if mowed for hay the ſixth year, and then ploughed and burnt, that it would bear the ſame rotation again!

The fens of Cambridgeſhire may be thus characterized. Though the term *Fen* applies to the whole, the land is not perfectly flat, nor by any means of one kind and quality; there being a conſiderable diverſity of ſubſtrata, and difference of elevation, with reſpect to the water level. The loweſt land is a very light ſoil, the ſubſtratum peat, about 2 feet in depth, lying upon a congeries of roots and fibres called *bear's-muck*, (or *now* more generally upon clay, the other having principally diſappeared, owing to circumſtances in the *natural hiſtory* of fens, which need not be here deſcribed). This is the proper definition of real fen land; and of this kind is a very great proportion of the fens

of

of Cambridgeſhire. But there is, notwithſtanding, a very great difference in the quality of this ſame deſcription of ſoil; in depth, in richneſs, in elevation, and the advantages of drainage. The fens of Chatteris and March, I believe, are by far the richeſt tracts of this ſort of land.

Of the ſecond-rate land, the ſoil is ſtill lighter, and in all reſpects inferior for cropping, but ſweeter for paſturage; it is only reckoned ſecond-rate on account of its elevation, for a reaſon which applies to its natural hiſtory, as before obſerved. The ſubſtratum of this is a very hard brown peat, about 4 inches thick, incumbent upon a ſtiff clay, which is now in many places within reach of the plough. A great proportion of Thorney-Fen, for inſtance, is of this deſcription; the ſoil is extremely permeable to the rays of the ſun, and therefore quickly affected by drought, which alſo divides the peat into angular pieces, and, when exceſſive, rends the clay alſo to the depth of 3 or 4 feet; through theſe fiſſures the ſoil gradually percolates and trickles down, looſened by the treading of cattle and other cauſes, and leaves the ſurface of the land very uneven.

Land of the firſt-rate, is a rich black loam, with a ſubſtratum of mild clay, and in ſome places *ſilt*,* without any intervention of peat. This land is fit for paſture, and of more value for grazing than the plough; for though it might produce plentiful green crops, the white crops would run more to ſtraw than corn. When ploughed, for the purpoſe of improving the paſture graſſes, it is very ſeldom burnt; the firſt crop is oats; the ſecond year well fallowed, to deſtroy the couch-graſs or twitch, and ſowed early in July with coleſeed—being, with the fallow, generally well dunged. The beſt method of returning it to graſs, without loſs or deterioration, is to ſow it the following ſpring with graſs and clover ſeeds, &c. with ſpring wheat. It is a doubt, even with this magagement, whether the land, for the purpoſe of feeding large cattle, is much improved;—for the purpoſe of feeding ſheep, it certainly is: But to be thus renewed once in half a century is certainly enough.

With reſpect to the ſecond-rate land, it is firſt ploughed and burnt, and the firſt crop is uniformly coleſeed, as your Chatteris correſpondent obſerves. The ſecond year generally oats, or ſpring wheat. The third year oats. The fourth year (if graſs ſeeds are not ſown with the ſecond crop of corn) the land is fallowed for coleſeed. The fifth year, oats or ſpring wheat with graſs ſeeds. This may be taken as the general rotation for fen lands; adding, that the graſs continues from five to ten years, either mowed

* Originally ſea-ſand.

mowed or eaten as occaſion may require. It may, however, be remarked, that though two white crops are here put in ſucceſſion, ſkilful agriculturiſts agree, that in order effectually to prevent deterioration, it would be better to take but one.

The management of the third-rate land differs in nothing that is material, excepting that, as the paſturage is of leſs value, it is not uſual or requiſite to let it remain ſo long in graſs.

The average produce of oats per acre cannot be rated at more than ſix quarters, or at the moſt two thirds of a laſt, or 56 buſhels; and of wheat, not exceeding three quarters, or 24 buſhels. I do not ſpeak of a ſingle inſtance of remarkable produce; a laſt of oats per acre may have been obtained on ſome particular pieces of land, and on others 32, or even 36 buſhels of wheat; nor do I mean to ſay, that what the gentleman has ſtated may not be in itſelf true, at Chatteris. But the inference to be drawn from it is not true;—it is not true of fens in general. In a word, it is phyſically impoſſible that any land ſhould bear ſuch a rotation, and ſuch a produce *ad infinitum*; without which, the ſtatement cannot be called an *average*:—and why he has attempted to make it appear ſo, he beſt can judge. His anſwer to the queries, which he ſtates to have been ſent to him, may amuſe; but they certainly tend to miſlead, and they cannot be admitted by one who is really

A Fen Agriculturist.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Query reſpecting the advantages of Encloſing of Land.*

Sir,

If you have a ſpare corner in your Magazine, do me the favour of ſubmitting the following Query to the conſideration of your correſpondents. The encloſing of land is a ſubject of much importance both to proprietors and occupiers of land; but I am inclined to think, that much money has been, is, and ſtill may be, needleſsly expended in attempts to carry it into execution.

*Query*—Suppoſe a diſtrict naturally adapted to the growth of corn, and in which tillage forms the principal object, Is it the intereſt of proprietors and occupiers to encloſe the ſame with hedges, or ſtone walls, and will the expence thus incurred be reimburſed by the ſubſequent advantages?

I am yours, &c. Mago.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On Storing up Turnips for Winter Conſumption, &c.*

SIR,

IF the following thoughts on various ſubjects of rural œconomy, are worthy of notice, they may be inſerted in your Miſcellany.

1. In regard to the ſtoring up of turnips through the winter, let them remain in the ground as long as they will not be hurt by froſt. As a very little froſt is prejudicial to them when ſtored up into heaps, more particularly when they get froſt after they are topped and tailed, and lying in the ridges, the ſure way is to carry them from the field immediately. In topping them, do not cut the ſkin off the turnips, either on the top or tail. Where the ſkin is broke, it always rots firſt. When a little of the top is left, it will be more apt to vegetate; and they are better to grow than rot: But to prevent both is beſt, if poſſible, as they then retain more nutritive qualities. The ſize of the heaps in which I find them keep beſt, is, the breadth five feet, the height four, tapering from the bottom to the top of the heap: the length of the heap cannot hurt them. I have had heaps from 15 to 60 feet in length, and found no difference in keeping them equally well. Be ſure to keep them on the ſurface of the ground, as they have there more air, than when partly above and partly below the ground, as I found by experience four years ago. I cover ſome of the heaps with divot, caſt and winnowed in ſummer: the drier they are, ſo much the better. Other heaps I cover with ruſhes half a foot thick. When the froſt ſets in, take ſome of the rankeſt horſe-dung, and put over the ruſhes: this preſerves them from the ſevereſt froſt that we have in this climate: but I never do ſo till the froſt is ſevere. In this way I have had them as good, to appearance, at the firſt of March, as when taken from the ground, although, undoubtedly, they muſt have loſt ſome of their nutritive qualities.

2. In regard to Swediſh turnip, I could never buy ſeed that anſwered ſo well as that which I raiſed myſelf; they always run to runts, and never apple at all. I could never diſtinguiſh the good ſeed from the bad; neither do I believe it poſſible to be done by any perſon whatever. Sow them three weeks before the common turnip. When the ſeed is ſown for tranſplanting, it muſt be done as ſoon as the ſeaſon for ſmall ſeeds ſets in, or about the time of ſowing kail ſeed in the garden, as then they grow better. I always tranſplant a part, and then I have two

chances,

chances. In a dry ſeaſon, the tranſplanted are beſt; in a rainy, I know no material difference. Never tranſplant them but on new-formed ridges, which ought always to be previouſly rolled in the ſame way as for ſowing the common turnip. The only advantage ariſing from tranſplanting is that, when the ground is not ſo very well prepared as it ought, it gives three weeks longer time for the preparation of the ground, which in dry weather may get two more furrows, it being impoſſible to pulverize the ground too well for ſuch a ſmall ſeed. To give the annual ſeeds an opportunity of vegetating, I always harrow immediately after ploughing, and very often have the harrows going before the field is all ploughed. Though this practice be as yet adopted by very few beſides myſelf, I hope ſoon to ſee every farmer in the country, for his own intereſt, follow the example. Rolling is abſolutely neceſſary before ridging, as it defends from drought better than as left by the harrows. Rolling is not a very tedious operation. To roll a week before ridging, you will have a fine braird of annuals, which the ridging kills entirely. Theſe operations are not yet univerſally known with us; but I can aſſure you they are abſolutely neceſſary for a good crop.

3. I would not adviſe to riſk a whole crop of Swediſh turnip, as the quantity is in proportion as 3 is to 5 in favour of the common turnip. For milk cows, the Swediſh, however, are nearly equal; they give the milk a better taſte, and the butter an excellent colour—nothing ſhort of July. I fed a colt laſt winter with this root, and am now feeding him this winter alſo; and he is in as thriving a condition as if he had got four ſeeds of oats per day—giving him plenty of ſtraw always.

I received a ſmall quantity of your Swediſh turnip-ſeed, for which I am much obliged to you. You'll pleaſe accept of a little of mine, of crops 1802 and 1803. I always find that old and new ſeeds ought to be ſown together, and that, as the new comes up two days ſooner than the old, the plants may thus be ſaved from the depredation of that ſmall inſect which devours them greedily as ſoon as they appear; but the danger is over when we get rain.

I am very happy to hear that your ideas and mine correſpond with regard to ſeeds being adulterated, by their proximity to one another when in bloſſom. I have alſo obſerved that the bloſſom ſtanding neareſt the ſouth, is not ſo apt to be infected, as that on the north ſide: Of the former, the bloſſom always expands to the ſun; and that on the north is more ready to receive the *farinæ* or duſt, by the ſouthern gales, which often happen on a ſun-ſhining day. Some may ſay that bees carry the duſt to

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the ſouth, as well as to the north; but, ſo far as I have obſerved, the north ſtanding bloſſom is moſt infected.

I plant early potato on the ſouth ſide of the field, and by that means have ſowed a good early potato for ſeven years together. I have tried them on ridges alternately with other kinds, and could not then preſerve them free from adulterating two years. As ſome may think that my ideas with regard to potatoes are chimerical, I ſhould like to know your ſentiments on the ſubject.

With regard to Swediſh turnip, the quality is certainly much ſuperior to that of the common kind. When given to cattle in the autumn, they cannot eat ſo many of them, being then ſo hard that the animals muſt ſtand longer on their feet before they are ſatisfied with eating, which is hurtful for feeding: The more the animal reſts, ſo much the better. If they are to be kept till ſpring, the balance preponderates in favour of the Swediſh, becauſe few or none are hurt by the froſt; and they always retain their nouriſhment, whereas the common turnip loſes greatly.

I have ſtored up the one half this year, and left the other half in the field; and ſhall be able in two months to anſwer your query reſpecting which method anſwers beſt. I am inclined to think that thoſe in the field will be beſt kept, as what were taken up in November are ſpringing more than the common turnip, which will undoubtedly rob them of their nutritive qualities. I have not been much troubled with hares this year, nor laſt; and having a greater quantity of turnips ſown, the damage is not eaſily diſtinguiſhed till it is taken up.

As to the propriety of fatting cattle with them in the ſpring, I have had no experience. I always kept them for milk cows, and can only ſay that the Swediſh are far ſuperior to the common turnip for milk and butter in the ſpring.

The quantity which I give my colt this year, is from 16 lib. to 20 lib. per day, Dutch weight, in the morning before watering, and at night before watering, but he drinks very little. I chop them into ſlices, and put a handful of meal ſeeds amongſt them. The meal being completely ſeparated from the ſeeds or huſks of the oats, before mixing with the turnip, without a handful of ſeeds, they make him laxative.

I tried Lord Meadowbank's compoſition of dung and moſs laſt ſummer, and have given it a fair trial with other compoſts of lime and moſs, and lime and earth, on the ſame field. To do juſtice to his Lordſhip, the fermentation took place, almoſt to an hour, in the beginning of July laſt. What I did not be-

lieve,

lieve, in reading his Eſſay, was, that the damper the moſs, the fermentation would come the ſooner; though this really happened. The moſs was equally as good for fuel as any moſs in the kingdom, being a very hard, black peat, when dried. If the compound anſwers as well in the end as at the beginning, I mean, for a good return of crop, it will be the moſt valuable ſubſtitute for manure that has yet been diſcovered in our iſland, as moſs every where abounds. I am yours, &c.

A Lanarkshire Farmer.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Working of Oxen.*

Sir,

Ox-draughts for ploughing and other branches of huſbandry, were univerſal in Northumberland about ſixty years ago. Two oxen were yoked behind a pair of horſes, and theſe oxen were changed every yoking; ſo that four oxen were, at intervals, attached to one plough with a pair of horſes. Theſe ploughs were driven by a boy. Since that period, ploughs of a lighter conſtruction, ſimilar to thoſe now in uſe, were introduced into this county, to be worked with a pair of horſes only, and without a driver. In a ſhort time they entirely ſuperſeded the horſe and ox-ploughs, as, without a driver, they performed more work in general than the other draught. A few, and but a very few farmers have of late adopted the ox as an animal of labour by himſelf. They are chiefly uſed, I believe, in carting at home.

Your noble correſpondent, Lord Somerville, has, in the 15th Number of your Magazine, favoured us with an account of his ox-ploughs, which ſurpaſs in activity any thing I have ſeen or heard of. Five acres, *well* ploughed, it muſt be ſuppoſed by the *ſame* pair of oxen, in a week, is certainly a great performance. His Lordſhip, however, does not notice the kind of ſoil on which they are employed, whether ſtony, clayey, or hilly. The nature of the ſubſoil is alſo material. Of the former kind of ſoil, the degree of labour in the working animal is deeply affected by the poſition and ſize of the ſtones, and by the kind of ſtuff, as miners term it, in which they are placed. If this be a hard binding clay, the ſtrength of the labouring creature to force forward the plough, muſt be proportionally greater. A ſtiff clay to work in, and ſtill more if placed on ſteep acclivities, and on a hard or ſtony ſubſoil, will form weighty conſidera-

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tions with the farmer, in rating truly the work of oxen, and, conſequently, in enabling him to appreciate juſtly its value.

His Lordſhip adds, that 'his work is done at the rate of about 80 acres of tillage to four oxen,' or 40 acres to one pair. At the rate of five acres *per* week to one pair of oxen, the labour of theſe beaſts at plough, will be finiſhed in a couple of months. Are they in the other ten months alſo *fully* employed? Do they, in the intervals between their ploughing, from March to September incluſive, perform *daily* work equal to the eight weeks they are employed in ploughing? Are they applicable to the whole work of the farm? Do they carry forward winter-ploughing as quickly, according to the length of the day, and *poach* the land *as little* as horſes do? Can they be uſed as ſafely as horſes in carrying corn to market? Are they as little liable to be lamed? If theſe things, upon a ſtrict inveſtigation by his Lordſhip, be ſo; and if, in jobbing work in the winter months, their labour keeps pace with that of horſes in the proportion of ſix to five, (*i. e.* if ſix pairs of oxen will execute as much work on a farm *throughout the year*, as five pairs of horſes of equal weight) then the queſtion in favour of the former draught cattle, will appear to receive a complete deciſion.

I am, Sir, your obedient ſervant,

*** J.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*A Cure for the Black-Spald in Calves.*

SIR,

Being much diſappointed to find that a query, by your Berwickſhire correſpondent, of 19th January 1803, reſpecting the *black-ſpald* in calves of a year old, has not been anſwered by ſome of your numerous readers, I humbly preſume to offer my mite, hoping, if it be not uſeful in itſelf, it may be the means of inducing ſome abler writers to handle a ſubject of ſo great importance to breeders of cattle. What is called the black-ſpald in Berwickſhire, I apprehend to be the ſame diſeaſe that, in this country, is called the *quarter-ill*, or ill-trouble. It is moſt common to year olds that are in good condition; but I have ſeen it ſeize cattle of five years of age. The certain ſymptoms of the diſeaſe are lameneſs in one of the feet, loathing of food, and, in a ſhort time, ſome part of the affected leg or ſhoulder, when the ſkin is drawn up between the fingers and thumb, will crack

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and make a noiſe like a piece of dry ſkin that is preſſed between one's hands. Twenty-four hours of the diſeaſe commonly does the buſineſs; but I never ſaw any that died, ſurvive thirty-ſix hours.

The firſt cure for this complaint, that I ever ſaw performed, was on an ox of four and a half years of age. As he was going in the plough, I obſerved him a little lame in one of the hinder feet. At firſt I thought he had trampled upon a ſtone; but as it ſtill grew worſe, I ſoon ſuſpected it was the quarter-ill; the more ſo, as there was a good year old died of that diſorder three weeks before. By the time he was got to the byre, the crackling between the ſkin and the fleſh was very perceptible on the top joint of the off-ſide hinder leg. As our blackſmith had ſome ſkill among live ſtock, he was inſtantly ſent for. The firſt thing he did was to take a little blood from a vein in the neck. He then pulled the ſkin from the fleſh, on the part that ſeemed moſt pained, ſtill keeping the beaſt walking as much as poſſible. He then cauſed cold water to be poured in large quantities on the part affected, ſtill rubbing and keeping the ſkin looſe on the affected part. Finding the ſkin adhere much to the fleſh, he then made three cuts with a penknife, two inches long, into which he rubbed ſalt and water. In this manner he continued four hours. The one time driving him, then pouring on water, rubbing in ſalt, and looſening the ſkin from the fleſh. By this time he was not near ſo cripple, and began to take his food. We were ordered, however, to keep him in motion all night, and in the morning he was well for his food, and never had any more ſigns of the diſeaſe. Since that time, I have followed the blackſmith's practice, and have often been ſucceſsful. Only, inſtead of pouring water on the place, I faſten a rope about the beaſt's head, and take it to a deep pool, cauſing it ſwim up and down, and then drive it, frequently giving it an ounce, or half an ounce of laudanum, according to the ſize or age of the beaſt, but I never did cut the ſkin. I have good reaſon to believe that the above method has been the means of curing ſeveral of my own young cattle, as I never ſaw any that took that diſeaſe, and no means uſed for their recovery, but died; thoſe I opened, had all the blood collected in the affected quarter. I find it more difficult to cure in the fore quarters than in the hinder; and if it ſeize the bowels, I hardly think that it will cure by any means.

The following recipe was given me lately, as a cure for the above diſeaſe; but as I never tried it, can ſay nothing to recommend it. Diſſolve a large handful of ſalt in eight gills of water. Looſen the ſkin on the affected part, as recommended above. Pierce an awl or boring ſtob through the cartilage between

tween the noſtrils; then put half of the ſalt and water over the beaſt's throat; put half the remaining water and ſalt into one of its ears, keeping the ear cloſe with the hand, and the remainder into the other ear; then keep both ears cloſe, ſo that the water may be kept in for about a minute or ſo. If the beaſt ſhake its head vehemently when let looſe, it is out of danger. The above quantity is a proper doſe for a year old; for a full grown beaſt double the quantity may be adminiſtered.

No. XV. contains a note by you, ſaying, that the ſcab in ſheep s eaſily cured by tobacco liquor and ſpirit of tar. As that diſeaſe has been very common and deſtructive in this place, for ſeveral years paſt, it would be doing an eſſential ſervice to many readers, to point out, through the channel of your valuable Magazine, the proper quantity of ſaid medicines per ſcore or hundred; what preparation is neceſſary; how, and in what ſeaſon, the application can be made with moſt advantage and ſafety.

In June laſt, I meaſured nine bolls of oats, weighing 14 ſtone 2 pound each. They were carefully dried, carried to the mill, and made into meal. The produce from ſaid corn was 6 bolls 14 pecks, at nine ſtone of meal per boll; in other words, they yielded 12$\frac{1}{2}$ pecks of meal per boll of oats. As I think there is a great defect in our mills, or millers, in this part of the country, would be glad to know what quantity of meal a given quantity of oats produces in other parts of the country, where machinery and millers are good. The ſeeds of the above meal were as clean as it was poſſible to make them. The gentlemen in this place have not as yet availed themſelves of the advantages of the thirlage bill. The old practices continue. Every perſon is bound to grind his crop at a certain mill, where multures, knaveſhip, and miller's meal, with the ſeeds thereof, are all paid in kind.

Servants wages have been higher this year than at any former period. The higheſt priced ſervants (though not always the beſt) get 7l. 10s. this winter half year; ordinary hands 5l. to 5l. 10s.; boys from 3l. to 4l.; maid ſervants from 30s. to 33s. They have all been aſking ſtill higher for the enſuing half year. Women, for the time of harveſt (which, in ordinary ſeaſons, is performed in ſix weeks), are aſking 40s.; and men from 3l. to 4l. Nothing but ſcarcity reduces wages here, and there is a probability of that being not very diſtant. We have no labourers; but all our work done by ſervants maintained in the maſter's houſe. Thoſe who have crofts are above hiring for day's wages. I am, with reſpect and eſteem, your very humble ſervant,

W. CRAIGIE.

*Belnaboth, Aberdeenſhire, 24th April* 1804.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

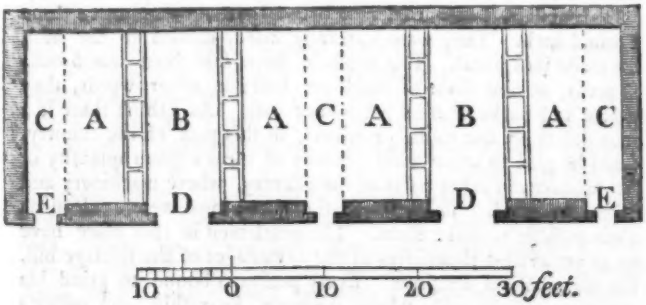
## *Plan of a Feeding Byre.*

SIR,

EXPECTING to have ſeen in your Magazine a deſcription of a complete farm-ſteading, as promiſed in No. XI., I deferred ſending you the following plan of a feeding byre. I do not diſpute the uſefulneſs of Mr Hunter's at Eſkmount, but cannot ſubſcribe to that part of the concluding paragraph where it is ſtated 'that there is no part of it either unneceſſary, or in any way more than uſually expenſive.'

The following is, in my opinion, *more convenient*, and much *leſs expenſive*.

### PLAN OF A FEEDING BYRE.




This byre, 60 feet long by 18 feet wide, will contain twenty cattle, ſtanding acroſs the houſe with their hinds towards each other, and leave a ſpace between them for laying up the turnips. A A A A are the four ſpaces for the cattle, each containing five, and may be fitted up with cribs, or ſtone troughs, according to Mr Hunter's plan. B B are the two ſpaces for containing the turnips, each 8 feet wide, and are divided from the cribs or troughs by a ſtrong wooden partition, or thin party-wall, of about 3 feet or 3½ feet high. The doors D D are wide enough to allow the cart with the turnips to be backed in and turned up. The turnips are thrown to the cattle over this low wall or partition. C C C are paſſages of 4 feet wide, behind the cattle, for cleaning out the dung by the doors E E E.* If a particular

* The engraver of the Plan having omitted to mark the central door with the letter E, the reader is requeſted to ſupply the omiſſion with his pen.

ticular ſituation ſhould make it more convenient, the large doors may be placed in the back of the byre.

This plan is not ideal, but has been acted upon in ſeveral farm-ſteadings in Roxburghſhire, and will contain *double* the number of cattle which Mr Hunter's byre does, and with a *leſs* quantity of walling, and as little (if not leſs) roofing. They are fed and cleaned with equal eaſe; and the urine may, with equal convenience, be conveyed to a compoſt dung court.

The dimenſions of Mr Hunter's byre, not deducting the doors, are,

| | | |
|---|---|---|
| Length of back wall - - | 60 | feet |
| Front wall - - - - | 44 | |
| One end wall - - - | 16 | |
| Outer wall of turnip barn - | 27 | |
| Inner do. - - - - | 27 | |
| Total length of walling - | 174 | feet |
| The above plan, 2 walls of 64 feet each - | 128 | |
| 2 ditto of 18 - - | 36 | |
| | 164 | total; |

being 10 feet of leſs walling than Mr Hunter's, and excluſive of the party-wall between the court of offices and the turnip barn in Mr Hunter's plan.

Were a byre conſtructed on Mr Hunter's plan for twenty cattle, the inconvenience of having the turnips in a barn at one end would be ſeriouſly felt, and would occaſion part of them to be carried *in a baſket* not leſs than the diſtance of 80 feet. But ſurely Mr Hunter's ſervant muſt have found, even for his ten cattle, a wheelbarrow to be a much better conveyance.

In a farm where only ten cattle are fed, the plan I ſend you is alſo very convenient. For five feeding cattle being placed on one ſide of the turnip ſpace, and five young cattle, or milk cows, on the other ſide, the green tops or ſhaws of the turnips may be thrown on one ſide to the young cattle, and the roots on the other ſide to the feeding ones. No doubt, this plan will not admit ſuch a quantity of turnips, proportioned to the number of cattle, to be laid up as in Mr Hunter's; but the ſpaces for the turnips may be increaſed, if neceſſary, by adding a few feet of length.

Turnips may alſo be preſerved in the field as well as in a houſe, in the following eaſy method. Cut off their tops and roots, and lay up the turnips in heaps of three or four cart-loads each; cover them with earth, or with ſtraw and earth, in the ſame way as it is uſual to preſerve potatoes, and they will keep fully as long, or longer, than they will do in a houſe. This

method is eligible in high ſituations, where turnips are very liable to be deſtroyed by froſt; and in any ſituation it is convenient to have a few preſerved in this manner, which may be uſed when the froſt is too hard to allow them to be taken up from the field. I am, Sir, your conſtant reader,

*Roxburghſhire*, 1804. S. E.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Anſwer to Arator's two Letters on Thraſhing Machines.*

SIR,

IN your laſt volume, page 128, Remarks are made on my *Letter on Thraſhing Mills*, Vol. III. p. 428, for my having preſumed to claſs Mr Meikle's name with that of Mr Cotterel, in deſcribing ſuch thraſhing mills as had come to my knowledge. Never having ſeen any thraſhing mill erected by Mr Meikle, I certainly could not pretend to give a deſcription of its powers; and my reaſon for expreſſing my uncertainty of who the real inventor of the machine now in uſe was, originated from a communication in the Agricultural Magazine, which ſtated, that, in an action raiſed againſt a Mr Raſtrick of Northumberland, for an encroachment on Mr Meikle's patent, the jury found that the thraſhing mill was not entirely the invention of Mr Meikle.

My wiſh was, through the medium of your Magazine, to inform ſmall farmers, who form rather the moſt numerous claſs of that body of men, that a machine of a ſmall ſize, and at a very moderate expence, could be erected; and, notwithſtanding the opinion of Arator, I will take the liberty of ſaying, that both the machines I have uſed, thraſh the ſtraw as clean as any machine can do. One corroborative proof of the fact is, that numberleſs machines in the north country are erected, and many more in the courſe of being erected, upon the very ſame plan, and nearly of the ſame dimenſions, as the one I at preſent uſe.

I do not pretend to be a firſt-rate mechanic; but it does not appear to me, from the deſcriptions that have been publiſhed of Mr Meikle's machine, that it requires very great mechanical knowledge to comprehend its powers; though the real inventor, whoever he was, had certainly very great merit. I muſt alſo beg leave to inform Arator, that I received my information in the year 1782, of the exiſtence of thraſhing mills in Sweden, from a timber merchant near London, when on a viſit to his friends

friends in this country. He had ſeen machines uſed by the peaſantry there for thraſhing their grain, which he deſcribed as ſomething betwixt that made by Mr Cotterel, and the one claimed by Mr Meikle as his invention. And, when I firſt attempted to make a mill for my own uſe, I endeavoured to follow his deſcription as nearly as poſſible. Theſe Swediſh machines were driven by water, and fed by two rollers; and the grain was knocked out by an open ſcutch inſtead of a drum; they were of various ſizes, though more generally ſmall; but the gentleman's removal to another country, where he died, prevented my receiving the particulars, as to the ſize and velocity.

With regard to Arator's attack on me for not mentioning thoſe machines he takes notice of, I have only to obſerve, that I never heard of them; but if Arator will peruſe the various Engliſh publications in agriculture, he will find that the ſize of your Magazine is quite inadequate to contain the numberleſs contradictory accounts of the invention and effect of the various thraſhing machines that have been, and ſtill are in uſe in the different counties in England. The object of publiſhing my obſervations on thraſhing machines has been accompliſhed; and nothing that Arator can ſay will either ſatisfy me or the public, that ſtraw, which we ſee is thraſhed clean by a ſmall machine, is not properly done, becauſe it has not paſſed through Mr Meikle's mill; and that a mill, which, with the aſſiſtance of a man, a woman, and a boy, will ſeparate three bolls, Aberdeenſhire meaſure, of grain from the ſtraw in an hour, is an uſeleſs machine, and that the people are only working to a loſs;—if a horſe machine, an additional boy is required. Many of theſe firſt are in uſe; and any perſon can in two days learn to feed them. In this country, a farm which raiſes 300 bolls, cannot be called a ſmall one.

In Arator's ſecond letter in your Supplement, though he quotes ſome expreſſions in mine, yet he has taken the trouble of inventing a machine for me, as I am perfectly unacquainted with the one he finds ſo much fault with there. My mill was deſcribed to take up a ſpace in the barn of about four feet by four, or four by five; and it, and thoſe in general uſe in this country, merely ſeparate the corn from the ſtraw.

The public and I had certainly reaſon to expect a complete hiſtory of thraſhing machines; but Arator's two letters contain little elſe than an eulogium on his friend Mr Meikle's mill, and an attempt to perſuade the public, that mine, or any others, are uſeleſs ones. And with regard to his calculations on the power and velocity of water wheels, was he the practical mecha-

nic he pretends to be, he would not require me to inform him, that a mill built by theory will fall very ſhort of expectation when put into practice. I ſhall only add, that Mr William Tunſtall of Midhall in Yorkſhire, has erected a mill, which, with one horſe, one man, and three children, thraſhes 50 buſhels of wheat in ſix hours. A trial was lately made at Earl Shafteſbury's, in Dorſetſhire, betwixt this and ſeveral other thraſhing mills, when its ſuperiority was completely aſcertained. By this, Arator's calculation of a boll in the hour for each horſe is completely refuted. The late Mr Palmer of Maxſtock, Warwickſhire, alſo invented a mill, which was much approved of there. I am, Sir, A. G.

*January* 28. 1804.

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OBSERVATIONS UPON THE ABOVE BY THE CONDUCTOR.

For various reaſons the above letter is printed verbatim; therefore we judge it neceſſary to correct a miſrepreſentation therein contained. We allude to what is ſtated reſpecting the diſpute betwixt Mr Meikle and Mr Raſtrick, which, we expreſsly maintain, never came before a jury, conſequently the court could not find '*that the thraſhing mill was not entirely the invention of Mr Meikle.*' Our correſpondent ſtated this circumſtance in his firſt letter; but, ſatisfied that he was in an error, we ventured to expunge the paſſage. However, as the ſtory is repeated, we give it in his own words, though it is no more than diſtributive juſtice to accompany the poiſon with a ſuitable antidote.

Mr Meikle, in the year 1799, brought an action againſt Mr Raſtrick in the Court of King's Bench; and had the trial proceeded, ſufficient evidence would have been given to convict defendant of an infringement upon plaintiff's patent right. In the evening before the day of trial, a meeting was held, by ſeveral of Mr Meikle's friends, with the Counſel employed (the Honourable Thomas Erſkine and Mr Wood), when, after hearing the nature and extent of the evidence, Mr Erſkine ſaid, 'Gentlemen, your proof is very good, and I entertain no doubt of getting a favourable verdict; but can you ſubſtantiate that defendant took money for the machines which he erected?' Upon being told that the agent or ſolicitor in the proſecution had not called for ſuch evidence, Mr Erſkine replied, 'Poſtpone the trial till next ſittings. Be then prepared to ſhow that defendant received value for the machines erected, without which there can be no infringement; for, was he to ſet up in defence, that the work was executed out of love and favour, and you could

could not diſprove it, a nonſuit would be the neceſſary conſequence.' Influenced by Mr Erſkine's advice, the trial was put off, and, as already ſtated by Arator, when Mr Meikle's friends ſeriouſly reflected upon the ſhortneſs of the patent-right (three years of it only then remained), and the trouble required to enforce it, they unanimouſly agreed to relinquiſh the proſecution. For the correctneſs of this ſtatement, we can appeal to the Counſel and Agents employed, and alſo to ſeveral other gentlemen who were preſent at the meeting when the nature and extent of the evidence was diſcuſſed.

Entertaining an idea that ARATOR will not neglect to do the needful, we paſs over the other parts of A. G.'s letter. The ſubject of thraſhing machines is of much importance, and the public muſt be benefited by ſuch inveſtigations.

N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Account of the Diſcovery and Propagation of Perennial Rye-Graſs in the Upper Ward of Clydeſdale.*

SIR,

CONSIDERING your Magazine as an uſeful repoſitory for recording the hiſtory of agricultural inventions and diſcoveries, I ſend you the following account of the diſcovery and propagation of *ſtanding* or *perennial rye-graſs* in the Upper Ward of Clydeſdale and county of Tweeddale.

I ought previouſly to obſerve, that the practice of improved huſbandry by turnip fallow and artificial graſſes, is (as to adoption into general practice) of not above twenty years ſtanding in theſe bounds. I ought to obſerve alſo, that for a conſiderable period after its general adoption, and even ſtill (as to the more general practice) it is confined to the old *croft-land*, or land contiguous to the farm onſtead, which, from time immemorial, in purſuance of the old ſyſtem, was in uſe to receive all the dung from the cattle houſed through winter, under the three-ſhift rotation of *beer, oats, peas;* a four-ſhift rotation of *turnip fallow, beer with graſs ſeeds, hay, oats,* being ſubſtituted in place of that of three; and the *outfield* continuing ſtill to be treated as before, in being ploughed up from lea, after dunging by cattle folded upon it in ſummer, and then ſubjected to oat crops (with ſometimes the intervention of a penultimate crop of peas) till exhauſted, and then left to gather graſs ſward as it might.

In this ſtate of improved huſbandry, confined ſolely to the croft land ſubjected to continued tillage, and where improved paſture conſtituted a part of the rotation, it is evident, that a *perennial*, or *ſtanding rye-graſs*, was a matter of no moment to the farmer.

From voluntary imitation of Mr M'Dougal in Linton's practice, in Tweeddale; and, in Clydeſdale Upper Ward, from the compulſatory regulations introduced into the leaſes upon the Carnwath eſtate by Mr Low (who, by the way, enjoys the equal confidence of landholder and tenant in that diſtrict, as much as he does through the Lothians and Berwickſhire), the improved huſbandry was extended to the outfields; and that, either by merely croping the outfields with a little more mercy, and laying them down again for paſture in better heart, while the crofts continued in conſtant rotation tillage without intervention of paſture, as already ſtated; or (as was in ſuitable farms enforced by Mr Low's regulations) by introducing a rotation ſyſtem, including intervals of paſture over the whole farm in common with the crofts; ſo that the whole ſhould be ſubjected to alternate huſbandry of tillage and of paſture.

This change of ſyſtem, including everywhere improved paſture, raiſed a demand for perennial rye-graſs—rye-graſs being found the earlieſt ſpring food. Unfortunately, however, (from having been in no requeſt in the firſt ſtage of improved huſbandry, where nothing had been required from it but a ſingle hay crop), no attention had been paid to it; and the *annual rye-graſs* (much more proper for a hay crop, as being a plant of more luxuriant growth) had entirely uſurped its place; and a *perennial rye-graſs* came to be a *deſideratum* in the extenſion of the improved ſyſtem.

Knowing that the firſt dependence for perennial rye-grass, in Tweeddale, was upon Carnwath, I took the opportunity, when in that quarter a few days ſince, to make inquiry as to the mode by which that diſtrict had got poſſeſſion of it; and the following is the reſult of my inquiry, upon the authenticity of which I can fully depend, from the intelligence and integrity of my informants.

About fifteen years ago, a Clydeſdale man, a Mr White, ſettled as a merchant in the village of Carnwath, after having ſpent moſt of his lifetime in the agricultural line in various counties of England: he is ſpoken of as having ſhown himſelf poſſeſſed of great intelligence in farming. Thirteen years ago, upon a viſit to Mr John French farmer of Lampits, near the village of Carnwath, Mr White diſcovered, and pointed out to him, a ſmall patch of perennial rye-graſs in a neglected ſpot of his garden. It was recollected that this ſaid garden had been laid out

in

in graſs eighteen years previous to this diſcovery; ſo that this graſs muſt have been of the true perennial kind, by having continued ſo long. It was carefully preſerved; and, from an original handful, came at laſt to be raiſed in quantity to ſupply the demand of the market; and is now in ſuch plenty as to have been ſold this ſpring at 12s. per boll. Mr French immediately ſowed out broad walks in his garden with it, from whence he is ſure of obtaining ſeed which has manifeſted its perenniality; in which caſe his walks (very prepoſterouſly indeed *as walks*, though moſt properly as to more important purpoſes) are moſt religiouſly kept ſacred from the impreſſion of human foot.

When with Mr French, upon occaſion of this inquiry, he ſhowed me ſome yellow garden turnip, which he had planted for bearing ſeed, of *equal ſize with common field turnip*, and which he had found in his field of common turnip. The ſame mixture had been found laſt ſeaſon in ſome fields of turnip in Tweeddale.

I found experiments had been made, at Carnwath, of the Swineridge improvement of deep moſs; but the improvement was conſidered as altogether diſproportionate to the expence. It was ſaid to have been found ſo in the neighbourhood of Paiſley, where lately it was proſecuted with vigour.

At Carnwath it is aſcertained to be more profitable to apply ſuch moſs to the improvement of dry lands, either by burning it into aſhes, or forming it into Meadowbank middings. Mr French, this ſeaſon, has inſtituted a fair comparative trial, upon very poor mooriſh land, well fallowed, and dreſſed with Meadowbank and other manures—the field ſown with oats, and graſſes for paſture. The farmers there are ſowing oats where beer uſed to be ſown. I am, &c.

*A Member of Eddleſtone Farmer's Club.*

*Tweeddale, 16th April* 1804.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Comparative Trial of different Breeds of Sheep.*

SIR,

I HAND you the reſult of a comparative trial made at Edgerſton in Roxburghſhire, of four different kinds of wedder hogs, viz. the Leiceſter, South-Down, Cheviot, Forreſter, or Black-faced breeds. Three of each kind were procured, very nearly of the ſame age, and in the ſame condition; which were weighed on the 10th of November 1802, were kept together on turnip from that day till the 16th of April following, and from that time upon good paſture till the 10th of November 1803, when they were again weighed. The reſult as under.

WHILE

WHILE ALIVE.

| *Kinds.* | *Weight 1802* | *Total Weight* | *Weight 1803.* | *Total Weight* | *Increaſe* | *Total Increaſe.* | *Value of Fleeces* | *Prime Coſt.* | *Weight of Fleeces* | *Total Weight of Fleeces.* |
|---|---|---|---|---|---|---|---|---|---|---|
| Leiceſter. | lib. | lib. | lib. | lib. | lib. | lib. | s. d. | L. s. | lib. | lib. |
| No. 1. | 76 | | 134 | | 58 | | | | 5¼ | |
| 2. | 75 | | 131⅓ | | 56⅓ | | | | 4 | |
| 3. | 68 | 219 | 135¼ | 401 | 67¼ | 182 | 5 6 | 3 18 | 4¾ | 14¼ |
| S. Down. | | | | | | | | | | |
| No. 1. | 77 | | 138 | | 61 | | | | 2¾ | |
| 2. | 69 | | 136 | | 67 | | | | 2¼ | |
| 3. | 71 | 217 | 124⅓ | 398⅓ | 53⅓ | 181⅓ | 5 2½ | 3 0 | 3¼ | 8¼ |
| Cheviot. | | | | | | | | | | |
| No. 1. | 64 | | 128½ | | 64½ | | | | 5 | |
| 2. | 59 | | 101 | | 42 | | | | 3¼ | |
| 3. | 59 | 182 | 117 | 346½ | 58 | 164½ | 3 9½ | 2 5 | 3¼ | 11¼ |
| Forreſter. | | | | | | | | | | |
| No. 1. | 70 | | 135 | | 65 | | | | 4 | |
| 2. | 70 | | 125 | | 55 | | | | 5¼ | |
| 3. | 59 | 199 | 115 | 376 | 56 | 177 | 2 0 | 1 19 | 4 | 13¼ |

*N. B.*—The above weight is Engliſh pound.

On the 15th November 1803, a ſheep of the beſt condition of each ſort was killed, at Jedburgh fair, viz. No. 1. Leiceſter, No. 2. South Down, No. 3. Cheviot, No. 1. Forreſter. Reſult as under.

LEICESTER.

| | *Weight.* | | *Value.* | | |
|---|---|---|---|---|---|
| | lib. | oz. | L. | s. | d. |
| Fleece, as above - - - - - - | | | 0 | 5 | 6 |
| His carcaſe, at 6d. per lib. - - - - - | 74 | 0 | 1 | 17 | 0 |
| His offals as under. | | | | | |
| Head and feet - - | 6 | 5 | 0 | 8 | |
| Skin - - - | 11 | 1 | 3 | 0 | |
| Pluck - - - | 4 | 12 | 0 | 2½ | |
| Blood - - - | 5 | 0 | 0 | 0 | |
| Entrails - - - | 18 | 6 | 1 | 4½ | |
| Tallow - - - | 12 | 5 | 7 | 2 | |
| Total offal - - | 57 | 13 | 0 | 12 | 5 |
| | 131 | 13 | 2 | 14 | 11 |
| Prime coſt, as above - - - - | | | 1 | 6 | 0 |
| Gain of one year's feeding - - - | | | 1 | 18 | 11 |
| Weight of animal life - - - - | 2 | 3 | | | |

SOUTH

## SOUTH DOWN.

| | Weight. | Value. |
|---|---|---|
| | lib. oz. | L. s. d. |
| His fleece, as in Table | | 0 5 2½ |
| His carcaſe, at 6d. per lib. | 74 3 | 1 17 1 |

| His offals, viz. | Weight. lib. oz. | Value. s. d. |
|---|---|---|
| Head and feet | 7 4 | 0 8 |
| Skin | 9 14 | 3 6 |
| Pluck | 5 3 | 0 2½ |
| Blood | 4 14 | 0 0 |
| Entrails | 16 8 | 1 6 |
| Tallow | 13 15 | 8 1½ |
| Total offal | 57 10 | 0 14 0 |
| | 131 13 | 2 16 3½ |
| Prime coſt, as above | | 1 0 0 |
| Gain of one year's feeding | | 1 16 3½ |
| Weight of animal life | 2 3 | |

## CHEVIOT.

| | Weight. | Value. |
|---|---|---|
| | lib. oz. | L. s. d. |
| Fleece, as in Table | | 0 3 9½ |
| His carcaſe, at 6d. per lib. | 64 11 | 1 12 4 |

| His offals, viz. | Weight. lib. oz. | Value. s. d. |
|---|---|---|
| Head and feet | 6 3 | 0 6 |
| Skin | 10 10 | 3 6 |
| Pluck | 4 9 | 0 2½ |
| Blood | 4 6 | 0 0 |
| Entrails | 17 14 | 1 0 |
| Tallow | 7 3 | 4 2½ |
| Total offal | 50 13 | 0 9 4½ |
| | 115 8 | 2 5 6½ |
| Prime coſt, as above | | 0 15 0 |
| Gain of one year's feeding | | 1 10 6½ |
| Weight of animal life | 1 8 | |

FOR-

## FORRESTER.

| | Weight. | | Value. | | |
|---|---|---|---|---|---|
| | lib. | oz. | L. | s. | d. |
| Fleece, as in Table | | | 0 | 2 | 0 |
| His carcase, at 6d. per lib. | 71 | 3 | 1 | 15 | 7 |

| His offals, viz. | Weight. lib. | oz. | Value. s. | d. |
|---|---|---|---|---|
| Head and feet | 8 | 8 | 0 | 8 |
| Skin | 13 | 0 | 2 | 0 |
| Pluck | 5 | 6 | 0 | 2½ |
| Blood | 4 | 15 | 0 | 0 |
| Entrails | 17 | 6 | 1 | 3 |
| Tallow | 12 | 1 | 7 | 0½ |

| | | | | | |
|---|---|---|---|---|---|
| Total offal | 61 | 4 | 0 | 11 | 1½ |
| | 132 | 7 | 2 | 8 | 8¼ |
| Prime cost, as above | | | 0 | 13 | 0 |
| Gain of one year's feeding | | | 1 | 15 | 8¼ |
| Weight of animal life | 2 | 9 | | | |

## RECAPITULATION.

*Increase of Weight.*

| | |
|---|---|
| Leicester breed | Lib. 182 |
| South Down do. | 181½ |
| Cheviot do. | 164½ |
| Forrester do. | 177 |

*Gain from One Year's Feeding per Head.*

| | | | |
|---|---|---|---|
| Leicester Breed | L. 1 | 18 | 11 |
| South Down do. | 1 | 16 | 3½ |
| Cheviot do. | 1 | 10 | 6½ |
| Forrester or Black-faced do. | 1 | 15 | 8¼ |

If the quantity of food consumed by each kind during the time of trial, could have been ascertained, the result would have been decisive; but, even without that *desideratum*, I apprehend the result is altogether in favour of the Black-faced sheep.

I am yours, &c. F.

*On*

## *On the Agriculture of the Netherlands. By the Abbé* MANN. *Extracted from 5th Vol. of* HUNTER'S *Georgical Eſſays.*

THE characteriſtic features of the Belgic peaſants are, *induſtry*, great *œconomy*, and a ſtrong *attachment* to the methods and cuſtoms of their predeceſſors.

Few people are more attached to their cuſtoms and practices than the Belgic peaſants. They ſeldom change their methods of agriculture, being perſuaded that their forefathers were as wiſe and knowing as themſelves, and that what they did, is the beſt themſelves can do. Whatever may be judged of their manner of living, and of the form of their dwellings (in which, however, they are as contented and happy as the moſt elegant Engliſh farmer), it will eaſily be acknowledged by thoſe thoroughly acquainted with the Flemiſh agriculture, that their practices are far from being either bad or irrational: on the contrary, it ſeems that long experience has ſo well ſucceeded in adapting theſe to the nature of the ſoil, that it would be hard to do any thing better. During the many years I was at the head of an eſtabliſhment which had many farms in property, and deſirous to have them cultivated to the beſt advantage, I tried what experiments I could for this purpoſe. The intelligent farmers whom I often conſulted on theſe heads, gave me ſatisfactory reaſons, why the methods they followed were preferable to what I propoſed doing; and alſo why this would not ſucceed, as it proved in effect. The general reſult which I have been able to form, from what I know of the Flemiſh agriculture, is, that they draw from their farms the beſt crops, and the moſt food for great and ſmall cattle, fowl, &c. which the ſoil is capable of producing. The quantity thereof is certainly great, when compared to any extent of land in Germany, France, Spain, England, or any other country I am acquainted with. The compariſon, if made with due knowledge and impartiality, will certainly turn in favour of Flemiſh agriculture, whatever may be ſaid in preference of the neatneſs and elegance of the methods uſed elſewhere, and of the uſefulneſs of the new-invented machines employed therein.

What I have already ſaid, is as much as this Eſſay will admit of, on the general nature of Belgic agriculture. I ſhall now add a few words on the principles which the legiſlature follows with reſpect to it.

Theſe are chiefly confined to the following heads: 1*ſt*, Permiſſion for exportation of corn in times of abundance, and reſtrictions in times of ſcarcity: 2*dly*, Ordinances for bringing corn to be ſold at the markets, and for preventing it to be bought on the field, or at the farmer's: 3*dly*, Ordinances, in ſome provinces,

vinces, for reſtraining the extent of farms, and preſcribing a diviſion of thoſe of too great extent; alſo forbidding the deſtruction of farm houſes without rebuilding them.

The ordinances for bringing corn to be ſold at market, are generally eluded: the corn is bought at the farmer's; he brings it to market, expoſes it, and his firſt anſwer is, that it is ſold. This is often the cauſe of murmurs among the people; but I know of no remedy found for it, except the prohibition of all exportation, which takes place as ſoon as a real ſcarcity is felt; and this in its turn excites the murmurs of the farmers, who have ſeldom any other view than their private intereſt, and who, always having corn enough for their own uſe, never ſee a ſcarcity in the country.

As to the methods of agriculture, or the nature of crops, the government of the Low Countries takes no cognizance of them, but leaves every one to do what he thinks beſt; and certainly private intereſt and the love of gain are the beſt ſtimulants on this head, and ſeldom fail to excite each one to cultivate his ground in the manner, and with the productions, which he finds moſt profitable. Experience thereon is his only rule and guide.

The moſt univerſal land-meaſure in the Low Countries is the *bunder* or bonier. In Brabant and Hainault it contains 400 ſquare perches or roods of 20 feet long; ſo that the ſquare rood contains 400 ſquare feet, and the bunder 160,000. The rood varies in different parts, as does alſo the foot, which in general is leſs than the Engliſh one. On an average the bunder may be reckoned three Engliſh acres. In Flanders, land is uſually meaſured by what is called a *ghemet*, a meaſure containing three hundred ſquare roods; the rood being in ſome places twelve, in others fifteen, Flemiſh feet long: but, in ſome parts of this province, a bunder or bonier is in uſe, containing 400 ſquare roods, as in Brabant and Hainault: but the rood varies in different cantons, from ten to twenty feet in length. The bonier contains four journals of land.

In the reſt of this eſſay, I ſhall treat briefly of the methods of agriculture in different parts of Flanders, Brabant, and Hainault, diſtinguiſhing them according to the different nature of the ſoil, and confining myſelf to ſuch practices as are generally eſtabliſhed in each. As the difference of climate is inſenſible within theſe limits, I ſhall prefer the order which reſults from the ſoil, to that of locality, as the practices of huſbandry, in an extent of flat country not exceeding one hundred miles any way, are determined in a great meaſure by the ſoil alone.

The different ſoils I ſhall ſpeak of are the following:

1. The ſandy heath of the Campine of Brabant.
2. The parts of Brabant contiguous to the Campine.

3. The ſtrong clayey ſoil of Walloon-Brabant, and the northern parts of Hainault.

4. The ſoil of the middle region of Brabant, being a mixture of ſand and loam.

5. The light ſandy ſoil about Bruges.

6. The rich loam of the diſtricts of Ghent, Courtray, and Maritime Flanders.

7. The artificial ſoil of the Pays de Waes.

*The Campine of Brabant.*

It is well known that the Campine of Brabant, which is the northern part of that province, conſiſted originally of ſand covered with heath, interſperſed with lakes and extenſive marſhes, and here and there with woods of fir. Tradition ſuppoſes it to have been once a part of the ſea. To this day, where cultivation has not extended, the ſoil of itſelf produces nothing but heath and fir. The ſand is of the moſt barren and harſh kind, nor can it be rendered fertile, but by continued manuring. As the property of this ground may be acquired for a trifle, many have been the attempts of private perſons to bring tracts of it into cultivation; every means have been tried for that purpoſe, and government has given every poſſible encouragement to it. But I have not heard of any one, however conſiderable might be his fortune, that has ſucceeded in it, and many have been ruined by the project. What is cultivated in the Campine, is owing to the religious houſes eſtabliſhed in it, eſpecially to the two great abbeys of Tongerloo and Everbode. Their uninterrupted duration for five or ſix hundred years paſt, and their indefatigable induſtry, have conquered theſe barren harſh ſands, and rendered many parts of them highly productive. The method they follow is ſimple and uniform; they never undertake to cultivate more of this barren ſoil at a time than they have ſufficient manure for; ſeldom more than five or ſix bunders in a year; and when it is brought by labour and manuring into a ſtate capable of producing ſufficient for a family to live on, it is let out to farmers on eaſy terms, after having built them comfortable habitations. By theſe means, many extenſive tracts of the Campine are well cultivated, and covered with villages, well built houſes, and churches. The abbey of Tongerloo alone furniſhes about ſeventy of its members as curates to theſe pariſhes, all of whom owe their exiſtence to that original ſtock. I may add here, and that from the undoubted teſtimony of the hiſtorians of the Low Countries, that the cultivation of the greateſt part of theſe rich provinces, took its riſe from the ſelfſame means, eight hundred or a thouſand years back, when they were in a manner one continued foreſt.

A Campine farm of twenty bunders is ſtocked with two or three horſes, ſeven or eight cows, ſome oxen, and is cultivated with coleſeed, clover, rye, oats, and little or no wheat. It is hardly neceſſary to add, that potatoes, turnips, and carrots are cultivated not only in the Campine, but throughout all the Low Countries. But the culture of ſpergule *(alſine ſpergula major)* is more peculiar to the north of Brabant, though not confined to that tract alone. It ſerves the cows for autumn food, and the butter of this ſeaſon is called ſpergule butter, of which the Campine furniſhes a great quantity, eſpecially to Bruſſels, where it is employed for the uſe of the kitchen, as being both cheaper and more profitable than any other for that purpoſe. This plant is ſown where corn has been reaped, after the ground has been lightly ploughed. Cows are tethered on it in October, and a ſpace allowed to each one proportionable to the quantity of food which is proper for her. This paſture laſts till the froſts come on.

As ſpergule gives but little ſtraw, and conſequently little manure, the farmers ſupply the want thereof in the following manner—The peat or ſods which are cut from the heath, are placed in the ſtables and cow-ſtalls as litter for the cattle. The ground under them is dug to a certain depth, ſo as to admit a conſiderable quantity of theſe peat ſods, and freſh ones are added as the feet of the cattle tread them down into leſs compaſs. Theſe compoſe ſo many beds of manure, thoroughly impregnated with the urine and dung of the cattle. This litter is renewed at proper times, and that which is removed from the ſtables and cow-ſtalls is laid up in heaps, till it be carried into the fields where it is to be ſpread. This mixture produces a compoſt of excellent quality for fertilizing ground where corn is to be ſown. By theſe means a far greater quantity of manure is produced from the peat, than could be had by burning it, as is done in ſome parts. In the Campine of Brabant, the main object which the farmers have in view, is to obtain a great quantity of manure, without which all attempts to cultivate that barren ſoil are in vain.

Beſides butter, the Campine furniſhes the reſt of Brabant, and Bruſſels particularly, with great quantities of fat fowl: the markets are conſtantly ſupplied with them, and they are preferred to any other of the ſame kind. They are not leſs ſought for and eſteemed in South Holland.

*The Parts of Brabant contiguous to the Campine.*

There is no great farms in theſe parts, and hardly any ſuch thing as tenants; each farmer is a proprietor; and as he cultivates his own ground, it is clear that he will do all he can to render

render it fertile, without impoveriſhing it: far different in this reſpect from the tenant, who only ſeeks his own temporary intereſt, by forcing the ſoil, during his leaſe, if he has no aſſurance of renewing it, indifferent how much he may impoveriſh the land for the future.

There are many meadows in theſe diſtricts, which give regularly two crops of hay, one at midſummer, the other towards the end of Auguſt. It is not obſerved that frequent mowing impoveriſhes thoſe meadows whoſe ſoil is deep and fat. If others of inferior ſoil appear ſpent, the cuſtom is to ſow them for three ſucceeding years with oats, and the laſt thereof mixing clover with the oats: by this means they become excellent meadows anew.

In proportion as the ground riſes from the meadows, it diminiſhes in goodneſs, becoming at laſt a rough brown ſand, mixed with pebbles; and under this is a ſtratum of compact clay, through which water filtrates with difficulty. Such ground as this gives ſmall crops of rye, but it is excellent for black or Turkey wheat (*bled Sarrazin*).

The productions of this part of the country are, wheat, rye, barley, oats, and Turkey wheat; and as food for cattle, ſpergule, clover, turnips and potatoes. They cultivate alſo rape, coleſeed, and flax, chiefly for their oils; and alſo tobacco. I ſhall add a few obſervations on ſome of theſe.

The good corn land of this canton never lies fallow; the only reſt that is given it, is to let it lye a year in the clover that was ſown on it with the corn the preceding year; and then it returns again to corn, which is produced in its former abundance. It has been obſerved likewiſe, that the beſt crops are produced when the corn is ſown thin.

Turkey wheat, made into paſte, and fried with fat bacon, is the ordinary food of the peaſants of theſe parts, and alſo of the Campine. It ſerves them likewiſe for fatting their fowl; of which, as was ſaid above of the Campine, they feed great quantities for the markets of the reſt of Brabant and of Holland.

Great quantities of ſpergule are likewiſe cultivated in this diſtrict. It is ſown immediately after the corn is reaped. This plant is excellent in the latter ſeaſon for cows: it is wholeſome, and increaſes the quantity and the goodneſs of their milk; and the butter made from it is fatter, and keeps better, than that made from graſs in May and June. Spergule ſerves likewiſe for manure, in light ſoils, on account of its ſucculent and fat nature: being ploughed down while it is ſtill green, it ſerves as a partial amendment for ſowing wheat on the ground.

Clover is ſown along with rye, barley, oats, wheat, and even with flax. Clover ſeed is a great branch of commerce in this

country. When they do not chooſe to let the clover grow up for ſeed, it is cut at leaſt three times in a year. After the laſt cut, the plant is ploughed under, and makes a good manure; and, with a little dung added to it, wheat or rye are profitably ſown on the ground.

Turnips and carrots are ſown indifferently with any ſort of corn; inſomuch that in autumn, after the corn is reaped, the fields appear covered with them; and it is obſerved, that thoſe which grow in this manner, are better than thoſe planted in gardens, and are an excellent and healthy food for both men and cattle.

Potatoes are here likewiſe of great uſe for both. Their culture ſerves to amend ground newly broken up, by dividing and lightening its too compact parts, and rendering it thereby proper for ſowing rye on, the following year.

Coleſeed (*colza*) and rape require a ſtrong ſoil, and rather dry. Flax exhauſts the ground, and is detrimental to the culture of corn on it. Tobacco produces a ſtill worſe effect of the ſame kind.

It has been found of great uſe in this part of the country, to divide the land into ſmall fields, encloſed with ditches and quick-ſet hedges, which ſhelter the vegetation from the dry winds and froſts of the ſpring; nor are they leſs uſeful in long droughts, for the ſame reaſon. The ditches are receptacles for the water which runs off in rainy ſeaſons, and contribute alſo to the growth of the hedges, which are cut for faggots every five or ſix years. Oak, beech, birch, poplar, hazel, &c. are planted for theſe hedges, the growth of which is kept down by frequent cutting.

*Walloon Brabant, and Northern parts of Hainault.*

The ſoil I ſhall ſpeak of under this head, is in general a cold compact clay, almoſt impenetrable to rain, and in droughts hard and full of cracks. In ploughing, the furrows are made from eight to twelve feet in diſtance. Lime and marl are found to be the beſt manures for this ground, which is manured one year in three. Long experience has ſhown, that the earth, after ploughing, muſt not be too much broken; for if it be, the rain forms it into an even compact maſs, which afterwards dries and hardens, ſo as to become like one of the barn floors of the country; whereas, when the earth is left in clods, theſe crumble away inſenſibly during winter and ſpring, and thereby cover gradually the roots and young ſtalks of the corn.

*Culture of Wheat.*—The ground whereon wheat is to be ſown, is completely dunged, and ploughed five times; the firſt time in November, the ſecond in March or April, the third at Midſummer, at which time the dung is ſpread on it, the fourth in Auguſt

Auguſt, the fifth and laſt in September. Four raziers, weighing 100 lib. each, are uſually ſown on a bunder, which gives in its turn fifty raziers, when the crop is good. When lime is uſed for manure, four waggon loads are uſually laid on a bunder.

*Rye.*—This is ſown on land that has been dunged and ſown with wheat the foregoing year. Two ploughings ſuffice. The ſowing is begun about the 20th of September, if the weather permits: and in the ſpring, clover is ſown on it. The crop is uſually ripe in July.

*Meteil.*—Wheat and rye ſown together are called Meteil. This mixture is ſown, like rye, on a ground that has borne wheat the preceding year, and which has been ploughed in the ſame manner. The ſowing and reaping time of meteil are a little later than thoſe of the rye.

*Oats.*—They are ſown preferably on land which has borne clover; and in this caſe one ploughing ſuffices.

*Clover.*—Clover is ſown along with wheat and rye; 20 lib. of ſeed are uſed for a bunder. An artificial meadow of clover, remains good for two years; but in the ſpring of the ſecond year, forty tubs (cuvelles) of aſhes, each weighing about 60 lib. are ſpread on a bunder: but this quantity varies according to the ſeaſon and the nature of the ground.

*Potatoes and Carrots*—Are great articles of cultivation in theſe parts, and uſed for both men and cattle; but the methods have nothing peculiar.

*Turnips*—Are ſown on a well dunged ground, about the middle of July; and before the end of September, if the ſeaſon be favourable, they are fit to be given to the cattle, who feed partly on them as long as they remain good.

*Horſe-beans, Peas, Vetches.*—All theſe are cultivated in theſe parts of the Low Countries, without any material difference in the manner from what is practiſed elſewhere.

*Colzat or Coleſeed.*—It is ſown about the middle of July, and the young plants are tranſplanted about the end of September. This is done with a narrow ſpade, ſunk into the ground, and moved with the hand forwards and backwards, which ſimple motion makes a ſufficient opening to receive the plant: a boy or girl follows the labourer with plants, and, putting one of them into each hole, treads againſt it to cloſe it up. If the plantation is done with the plough, the plants are placed at regular diſtances in the furrow, and are covered with the earth turned up by the ſucceeding furrow. Some time after the coleſeed is planted, the foot of the ſtalks are covered by means of a common ſpade, or hoe, with the earth near it, which furniſhes nouriſhment for the plants during winter, by the crumbling of theſe little clods

of earth over the roots. The coleſeed is reaped about Midſummer, or later, according as the ſeaſon is more or leſs advanced: it is left on the field for ten or twelve days after it is cut, and then thraſhed on a kind of ſail-cloth, ſpread on the ground for that purpoſe, and the ſeed carried in ſacks to the farm. When the crop is good, a bunder produces about forty raziers, of 80 lib. weight each. It is to be obſerved, that the ground whereon coleſeed is to be planted, muſt be dunged, and twice ploughed, the ſame year it is put in uſe.

*Flax.*—The land for ſowing flax, muſt be carefully cleaned from bad weeds, and well dunged. Some farmers, for the ſake of getting better crops of flax, ſow it on clover ground, which they dung towards the end of September, and plough afterwards. One hundred and eighty pounds of ſeed are ſown on a bunder as ſoon as ſpring comes on. When the flax is about four inches high it is carefully weeded, without which precaution the weeds would ſtifle the plants; and this is repeated as often as the weeds get head anew. When the crop is good, a bunder yields about 400 lib. weight of flax. The flax of this part of the country, is much inferior in quality to that produced about Courtray and Menin.

In theſe parts of the Low Countries, the farms are uſually much greater than in Flanders, and in the middle region of Brabant, where the land is richer. In Hainault, all farms of above ſeventy bunders have been divided; but this has not extended to Walloon Brabant, where there are ſtill many great farms.

A farm of ſeventy bunders * is uſually diſtributed as follows: ten bunders of meadow, ten of wheat, twelve of rye, three of winter-barley, one of ſpring-barley, eight of oats, four of horſe-beans, peas, and vetches, and eight of clover; which together make fifty-ſix bunders in cultivation, the other fourteen lying fallow, in all ſeventy bunders. For cultivating ſuch a farm, eight horſes are neceſſary; and it is ſtocked with ſixteen cows, twelve oxen, and a flock of two hundred ſheep; beſides hogs and fowls in proportion.

### *The Middle Region of Brabant.*

The land is here a mixture of ſand and loam, which make an excellent light ſoil, but not ſo rich as that of Flanders, though preferable perhaps for corn. The uſual productions of this part of the country are wheat, rye, oats, barley, beans, peas, vetches, clover, turnips, carrots, and potatoes. No ground here lies fallow; the farms are ſeldom extenſive: forty bunders may be taken

* About 210 Engliſh acres.

taken for an average. The diſtribution of a farm of this ſize is uſually into about ſix bunders of meadow, and thirty-four of arable land.

Theſe laſt are manured almoſt yearly, with from twelve to ſixteen waggon loads of manure to each bunder, thoſe in clover excepted. On theſe it is uſual to ſpread, in March, turf-aſhes brought in boats from Holland. From eighty to one hundred tubs of about ſixty pounds weight each are employed for a bunder, one third of which is kept to be ſpread after the firſt cut. Many of the Flemiſh farmers make great uſe of theſe aſhes, which being highly impregnated with ſalts, enrich the land ſo as to render it capable of producing excellent crops of wheat, without any other manure, except turning under the clover it was ſown with the preceding year.

In moſt farm-yards, a deep ditch is dug near the cow-houſe, into which the urine of the cattle runs, and a ſufficient quantity is gathered, for ſpreading over two or three bunders, which proves an excellent manure.

The arable part of ſuch a farm as I am ſpeaking of, is diſtributed as follows: five bunders of wheat, five of rye, two of meteil, two of barley, four of oats, two of beans, peas, and vetches, five of clover, four of turnips, carrots, and potatoes, and five of coleſeed; in all thirty-four bunders, the other ſix being meadow.

The following rotation is uſed in the culture of theſe parts. The ground being well manured, the firſt year coleſeed is planted; the ſecond year it is ſown with wheat; and the third with rye, without dunging. From two to three raziers of wheat, of 80 lib. each, are uſually ſown on a bunder; and when the crop is good, it yields from thirty to forty raziers of the ſame weight.

Some farmers ſpread turf-aſhes on the ground where they have ſown turnips and carrots, as well as on that ſown with clover, &c. and then paſs the harrow over it.

In a favourable year, a journal (a quarter of a bunder) of land well manured, will produce from fifty to ſixty ſacks of potatoes.

Thoſe that feed ſheep in the diſtricts where no land lies fallow, feed them, as well as their other cattle, with corn, beans, peas, vetches, turnips, and other roots.

*Agriculture of Flanders; and firſt in the environs of Bruges.*

The quality of the ſoil varies greatly in different parts of the diſtrict of Bruges, although the main conſtituent of it be every where a light ſand. In many parts, continual manuring and cultivation have rendered it extremely rich; in ſome ſpots, for want of theſe, it is leſs ſo; but a more extenſive population would ſoon bring them into the ſame ſtate as the reſt.

There are many large farms in this part of the country, belonging in general to the rich abbeys; thoſe of lay proprietors are for the moſt part leſs; and thoſe of which the farmers themſelves are proprietors, are ſtill ſmaller. The culture in theſe cantons is regulated as follows:

A ghemet, or meaſure of land, is manured the firſt year with dung, or, near Bruges, with a boat load of ſtreet-dirt from that city; it is then ſown with flax; the ſecond year wheat is ſown on it; the third year rye; the fourth year it is again ſlightly manured, and ſown with oats or Turkey wheat, and ſometimes with clover, turnips, carrots, parſnips, or potatoes.

Clover is ſown along with oats, and only laſts a year: it is afterwards ploughed, manured, and ſown with wheat and flax.

Broom is ſometimes ſown as an amendment for bad land, and pulled up at the end of the ſecond year, during winter. The ground is then dunged, ploughed, and cultivated with later crops, ſown in the ſpring.

Turnips, carrots, parſnips, and potatoes, ſupply in theſe parts the want of meadows, and great care is taken to preſerve them during winter for food for their cattle. Turnips, carrots, and parſnips are laid in the earth, in round heaps, of eight or ten feet in diameter at the bottom, and five or ſix feet high; when the firſt layer is placed, it is covered with long ſtraw; and ſo on alternately to the top. Theſe heaps are opened in the winter or ſpring, according as the farmer has need of them for feeding his horſes and cows; they are given likewiſe to early lambs, when young graſs is wanting.

Potatoes are kept in deep holes dug in ſandy ground, where they are ſeldom hurt by ordinary froſts, and keep good till far on in the ſpring.

In this tract of country, there are many little woods of oak, elm, beech, alder, and here and there fir of the maritime kind. Great quantities of willows are planted, and ſome are let grow up into trees, out of which are made windlaſſes for the boats and barges of the country: theſe ſell dearer than oak.

*Lands on the Rivers Lys and Scheldt, from Menin and Courtray to Ghent and Dendermonde, and alſo of Maritime Flanders.*

The ſoil on the flat banks of the Lys and the Scheldt is reckoned among the beſt in Flanders: it is in general a rich, ſandy, moiſt loam, become almoſt black with a long and uninterrupted cultivation. Hardly any great farms are found here; thoſe of from ſixty to eighty ghemets are counted the greateſt, and they are generally leſs, as the land is richer.

In

In the largeſt of theſe farms, there are ſeldom more than three or four horſes, and ten or twelve cows. The farmer employs from twenty to thirty waggon loads of dung for three ghemets of land, and only fifteen or ſixteen loads, if it be ſtreet-dirt from the great towns, or turf-aſhes brought by water from Holland.

Theſe lands produce grain of every ſort in great abundance, as alſo every kind of eſculent roots, which are given to the cattle in winter, along with their hay. The meadows along the rivers, and in other parts of this rich and moiſt ſoil, are ſuperiorly good, and the clover is the moſt luxuriant I ever ſaw. It is uſual to ſpread, in the ſpring, ſixty ſacks of turf-aſhes on three ghemets of clover ſown the preceding year, which proves an excellent manure to it.

A great branch of culture in theſe parts, and particularly in the diſtricts of Courtray and Menin, is that of flax, of which they produce an immenſe quantity, and of the fineſt kind. The expence of this culture is great, the labour beſtowed on it in weeding, is almoſt uninterrupted, and the damage it does to the ſoil in exhauſting its vegetable juices, is beyond meaſure; but in return, a good crop will almoſt buy the ground. To recover the ſoil after a crop of flax, clover and ſpergule are ſown on it, and turned down for manure.

The plough uſed for this fine light ſoil, has a little wheel and an immoveable ſower: one horſe ſerves to draw it, or two at moſt in the ſtrongeſt of this ground.

Lands uncultivated, and fields lying fallow, are here unknown. There are few woods in this part of the country; but all the fields are encloſed with hedges, and thick ſet with trees, ſo much that the whole face of the country, ſeen from any little height, ſeems one continued wood.

The agriculture in Maritime Flanders is much the ſame with that now ſpoken of, as the ſoils of each bear a great reſemblance; only that near the ſea is more moiſt, the meadows are more extenſive, and little or no flax or ſpergule are there cultivated. If there be any material difference between theſe ſoils, it conſiſts in the greater quantity of marine ſubſtances, which enter into the compoſition of the ſoil of Maritime Flanders, than of that in the inner part of the country, and theſe add to it an additional degree of fertility.

The caſtlery of Furns, and the environs of Dixmude, abound more in excellent meadows than any other part of the Low Countries: the number of horned cattle fed there is immenſe, as is alſo the quantity of butter produced and ſold, chiefly at Dixmude market; and it is of the beſt quality, both for richneſs and keeping.

*The Pays de Waes.*

The land of Waes is the diſtrict lying on the north ſide of the Scheldt, between Ghent and Antwerp; it is a perfect flat, and is reckoned the richeſt part of Flanders. The original ſoil was pure ſand, and its preſent ſtate of fertility, is owing to the great number of its induſtrious inhabitants, who cultivate a few acres round their dwellings, of which, for the moſt part, they are proprietors. The natural meadows are rich, and the great number of cows which the inhabitants keep, furniſh manure in great abundance: But they are not content with this alone; great quantities of turf-aſhes are brought thither from Holland, as alſo a great part of the ſtreet-dirt and dung from Bruſſels, Antwerp, and Ghent, beſides what is had from the many rich and populous towns and villages, with which this diſtrict is covered.

The farms being ſo very ſmall, few horſes are kept in the land of Waes; the ground is chiefly worked with the ſpade and hoe, which the extreme lightneſs of the ſoil renders eaſy. If a plough be uſed, it is of the moſt ſimple kind, without wheels, and drawn by one horſe. All theſe contribute together to give a richneſs and fertility to the ſoil of this tract, which ſurpaſſes almoſt what can be imagined. No ſpot lies uncultivated.

The common method of culture is as follows: a bunder of land is manured, once in ſeven years, with from forty to fifty cart loads of dung, and town dirt. The firſt year it is ſown with hemp; the ſecond with flax; the third with wheat; the fourth and fifth with rye; the ſixth with oats; and the ſeventh with clover, Turkey wheat, turnips, or carrots. Fallow ground is unknown here.

Spergule is ſometimes ſown about mid Auguſt, on land that has borne wheat; and in October the cows are put into it. The ſpergule which they cultivate for ſeed is ſown in March, and reaped in June.

It is to be obſerved, that the riches of the land of Waes conſiſt chiefly in the culture of flax and hemp; the other crops being in general for their own uſe, and for home conſumption, which indeed is very conſiderable, on account of the great population of this diſtrict. The produce of their flax and hemp is ſo conſiderable, that in a good year they are reckoned to amount almoſt to the value of the ground.

The agriculture of the land of Waes, paſſes, indiſputably, for the moſt complete and perfect in all the Netherlands.

FOR THE FARMER'S MAGAZINE.

## *On Plantations; and, principally, on the advantage of making Woods and Planting Oak for undergrowth.*

PLANTATIONS of trees may be divided into three kinds,

1*st*, GROVES, which contain timber trees only, with ſome paſture.

2*d*, COPPICES, containing undergrowths only; which are cut over periodically for their produce in bark or fuel, &c.

3*d*, WOODS, which contain a mixture of trees with undergrowth. The former are allowed to ſtand until they are full grown; but the latter is cut over at ſtated periods, according to the kind, the ſoil, and other circumſtances.

Moſt PLANTATIONS, particularly in Scotland, though they generally go under the name of woods, are in reality of the grove kind. We find none of the trees kept decidedly under the reſt, cut over, and allowed to ſpring up again, while a certain number, from 15 *to* 30 *feet diſtance*, are preſerved until their timber is full grown; but, the trees being once planted, are allowed to grow up together, a few being thinned out where they are too much crowded, though by far too little attention is paid to thinning. Thoſe thinned out are either cut over or grubbed out by the roots, as may be moſt convenient, without any attention to propriety; and, in conſequence of this management, a few buſhes of undergrowth are found in ſome places; and the reſt of the ground, if not ſhaded too much by the crowded trees, is covered with paſture; but neither paſture nor undergrowths, from being intermixed, afford great profit to the proprietor.

There are other plantations, where undergrowth exiſts among timber trees in a more general way, but of kinds which are of little or no uſe, except for fuel; and this is far from being a profitable mode of diſpoſing of wood, particularly in a coal country. On the other hand, there are woods in ſome places where both timber and undergrowth are cultivated; and it is from ſeeing the great profits obtained by the proprietors of theſe woods that I make the following obſervations on the advantage of raiſing oak UNDERGROWTH in Scotland.

The high price given for oak bark is pretty generally known; and the value of that produced by an acre of oaks, from twelve to twenty-five years old, is very conſiderable. Among the inſtances that occur to me at preſent, the Duke of Athol's, at Dunkeld, appears the moſt proper to mention. There, on land worth little or nothing in aration or paſture, are oak woods, principally natural, the undergrowth of which is ſold every twenty-

twenty-five years at the rate of 30l. or 50l. per acre, the purchaſer being at all expences of cutting, carriage, &c. This is from 24s. to 40s. *per* acre *per annum*, independent of the value of the timber trees left, 250 of which may ſtand on each acre.

If the ſoil and expoſure of theſe woods be taken into conſideration, the growth of the trees will appear conſiderable; but I have obſerved that oaks do not grow half ſo faſt at Dunkeld as they do in the low and comparatively ſheltered lands of the more ſouthern diſtricts of Scotland; and am confident, if oak woods were planted (or at leaſt undergrowths of oaks in woods of any other deciduous tree) in theſe diſtricts, they would afford double the profit they do in the Highlands; would grow equal in ſize to Dunkeld undergrowth in twelve or thirteen years, and afford two cuttings in place of one. At Dunkeld, many places of the woods are too thin, and other parts covered with birches; but, in the Lowlands, they could be planted regularly thick, and, of courſe, would produce a more uniform crop, which would alſo make them more profitable.

However, leſt I ſhould be thought in any degree to make oak undergrowth appear more profitable than it really is, I ſhall only ſay, that, in moſt ſituations in Scotland, it will produce upwards of 2l.; and in many places of the Lowlands, upwards of 4l. *per* acre *per annum*; and I do not heſitate to add, that it would far exceed theſe ſums, in both caſes, were proper culture beſtowed upon the plants. This profit is independent of the produce of the timber trees; and if we ſuppoſe 250, or ſay only 200, are cut down every fifty years from each acre, at 3l. each, this is 12l. more *per* acre *per annum* for woods; and I am ſure none can ſay theſe calculations are in the leaſt degree overrated. *

Another thing which ought to be ſome inducement to plant oaks, is the eaſy charge with which it may be accompliſhed. It is, beyond a doubt, the ſpeedieſt, and in every reſpect the beſt method to raiſe oaks from the acorn, † by ſowing them at once where they are finally to remain. Now, 3 or 4 buſhels are abundantly ſufficient for an acre; which, at 5s. per buſhel, is, for

* It is proven beyond diſpute, that plantations properly made and managed will ultimately pay better than arable crops; but ſo few are to be ſeen properly managed, that men are unwilling to believe the fact upon the teſtimony of others. *See Marſhal, Agricola, Du Hamel, Young, &c. &c.*

† An acre of oaks afford a greater quantity of vegetable product than the ſame ſpace occupied with any other tree. This is owing to the top-root of the oak penetrating many feet below the ſurface, and deriving the principal part of its nourishment in the bowels of the earth,

for the whole acre, much below the price of a ſingle thouſand tranſplanted trees of any kind; and tranſplanted oaks, which would coſt nearly double that price, would be at leaſt three years behind them in point of ſize four years afterwards, both kinds being planted at the ſame time.

Suppoſing the ground, then, on which an oak wood was to be planted, ſummer-fallowed and trench ploughed, at 2l. per acre, and ſown broadcaſt, before the laſt ploughing, with acorns, the total expence, making an ordinary allowance for the proportion of the expence of encloſing, would be only 3l. 5s. or 3l. 10s. per acre.

Or, if it were deſirable to have the timber trees of ſome other kinds rather than oak, then 250 aſh, beech, or elm, on each acre, which is more than 20 feet apart, could be planted immediately after the acorns were ploughed in, which would only amount to 10s. per acre more, or 3l. 15s., or 4l. per acre in total; and I appeal to every one, whether plantations, with the ſoil thus prepared and planted, would not far exceed in growth thoſe where the ſoil is uncultivated, but which are pitted and planted with tranſplanted oaks at the rate of 7l. or 10l. per acre. If the method which I contend for is the beſt, it ſurely deſerves the ſerious attention of gentlemen who plant ſeveral hundreds of acres by this laſt mode.

In belts, ſtripes, and all narrow plantations for ſhelter, undergrowth ſhould always be planted: Trees alone allow the wind to paſs unrefined through their naked ſtems, and hence afford comparatively little ſhelter; but trees and undergrowths mixed are like an immenſe hedge, equally thick from top to bottom, which checks the progreſs and retards the velocity of the wind for 30 or 50 feet above the ſurface.

In point of effect, too, ſtripes of trees and undergrowth are infinitely preferable to ſtripes of trees only. There is a meanneſs and littleneſs in ſeeing the ſtems of the latter; but the former, by concealing the real width, and preſenting a thick dark appearance, produces a maſſiveneſs and grandeur which gives a rich and noble appearance to a cultivated country. It hardly requires to be mentioned, that oak is the beſt kind of undergrowth for theſe ſtripes, and that it will produce better crops there than in cloſe extenſive woods. I rather wiſh to recommend to proprietors, who may

earth, where no other tree can reach. It is from the top root principally that this tree increaſes in ſize, although it will live many years with horizontal roots only. This is a moſt important fact, well deſerving the attention of planters. *See Miller's Dict. art. Quercus. See alſo Hunter's Georgics, vol. VI.* 442. *&c.*

may have ruinous or little worth hardwood plantations under twenty-five years old, whether in ſtripes or more extenſive plots, to reduce the timber trees to 20 or 30 feet diſtance, to dig or clean the intervals, and to plant them with acorns. In twelve or fifteen years afterwards, they would find the advantage.

It is not my intention, however, to recommend the formation of woods, excluſive of groves or coppices; on the contrary, there are thin ſoils with bad underſtrata, where fir groves are more profitable than any other kind of plantation: there are ſteeps, and rocky banks, where no tree can be ſo advantagouſly cultivated as the common oak; and rich moiſt places where no plantation will turn out ſo profitable as oſiers: but, generally ſpeaking, it may be ſafely aſſerted that woods are the kind of plantation that ought to be moſt generally formed; and that, though the kind of timber grown in theſe woods muſt vary according to the conſumpt of different places, yet that oak will be found the beſt and moſt profitable undergrowth.

But few, who plant, think of making one kind of plantation, or rearing one kind of tree more than another. A certain ſpace is to be planted, and it is juſt marked off, encloſed, and ſtuck full of trees, (no matter of what kinds), without any determinate object in view.

From this neglect alone, independent of all others, (ſuch as preparing the ſoil previous to planting, cultivating it afterwards, training and thinning, &c.), few plantations yield one third of the profit which they might do. But where the kind of plantation to be formed is previouſly fixed upon, then a proprietor, who intends to lay out money in this way, can ſay—Here I ſhall plant a wood—it will coſt juſt ſo much at firſt—in ſo many years the undergrowth will yield a certain ſum—it will do ſo always at the return of the ſame period—ſo many timber trees will ſtand on each acre, which, at ſuch a time, will yield ſo much—and all theſe returns is juſt ſo much *per cent.* for the money which I have laid out—and, after deducting every expence, my profits will ſtand thus, &c.

Here I make a coppice—ſuch a tree is the moſt profitable to plant—I can plant ſo many acres for ſo much, and they will yield ſo much per acre in ſuch a time, and the ſame periodically afterwards.

Here, again, I plant a grove—it coſts me ſo much—in a certain number of years I will commence thinning—in ſo many years more I ſhall have thinned out juſt ſo many trees, at ſo much each, and left ſo many remaining on each acre;—now I ſow graſs ſeeds among theſe trees, and next year it will afford ſo much per acre for paſture, which it will continue to do for ſo many years, until at laſt I cut down the full grown timber, when each tree will afford

ſo

ſo much—or my total expence and profit will ſtand thus, &c. But mix all theſe kinds of plantations, and the different trees ſuitable for each kind together, as is commonly done, and what can be ſaid about them? or to what advantage can they be turned? The proprietor muſt feel great difficulty in directing their general management, and great uncertainty as to what they ſhould produce; nor has he any kind of check upon either the manager, the buyer, or the ſeller of his timber. But, by the mode which I recommend, he has a certain object in view in every plantation, even in every hedge-row or ſingle tree; and all his operations tend to promote this object. In this way he operates, though not with an abſolute certainty of the profits and loſs, yet with ſuch clear ideas on theſe heads, that he can never be at a loſs how to proceed, nor even greatly diſappointed in his expectations. J. L. L. & J.

*P. S.*—In the laſt Number of your Magazine, a correſpondent requeſts information 'concerning the moſt expeditious way of taking up the roots of trees.' I only beg to ſtate, in caſe you ſhould not be favoured with a more complete anſwer, that the beſt machine that has been uſed hitherto for this purpoſe in England, where oak roots of immenſe ſize are extracted, is the *Eradicator*, a deſcription and drawing of which, and alſo of another machine of the ſame kind, called the *German Devil*, will be found in the laſt edition of Shenton's *Euclyus Sylva*.

I think, that if the cylinder in theſe machines, on which the rope is wound up, were made conical, ſay 1 foot diameter at one end, and 4 feet at the other, and the rope put twice round at the ſmall end, one man alone would with eaſe raiſe the largeſt ſtone, or tear up the largeſt root that the ſtrength of the machine could bear. But ſince I thought of this plan, I have not had time to try the experiment, and therefore ſhall ſay nothing further at preſent.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Account of Farmer Creſinus and his Enchantments.*

SIR,

WHILE you beſtow ſuch laudable attention on the important ſcience of agriculture, and very properly conſider every fact and circumſtance connected with it as worthy of your notice, I am ſurpriſed that one claſs of cauſes, which were conſidered by moſt people formerly, and by many ſtill, to have a conſiderable influence on the ſucceſs of the huſbandman's operations, ſeems hitherto, as far as I can recollect, to have eſcaped you altogether. I hope, therefore, you will take in good part this attempt to ſupply the omiſſion.

What I propoſe in the following eſſay, is to ſhow the value and importance

importance of certain ſpells, charms and enchantments, and their efficacy in ſecuring the intereſts and ſucceſs of the farmer. I confeſs the current of the times ſeems rather to run counter to ſuch doctrines, men ſeeming now diſpoſed to refuſe theſe cauſes much of that merit which they were formerly allowed to poſſeſs. And I muſt acknowledge that my own inquiries, inſtituted with a view to obtain unequivocal proofs of their efficacy, and ſo to eſtabliſh, on ſure grounds, a ſyſtem in favour of which I was early prejudiced, have not, on the whole, been very ſatisfactorily anſwered. I cannot fairly ſay, for inſtance, that I have obſerved any remarkable difference (*cæteris paribus*) between horſes kept in a common ſtable, and thoſe kept in one that had the additional advantage of having an old horſe ſhoe nailed to the door *ſecundum artem*. I ſpeak, however, under correction. Again, it is uſually ſuppoſed that a couple of twigs of the mountain aſh, or rountree, as we call it, properly tied together with a ſcarlet thread, and placed carefully on the top of the wall, right over the door in the byre, is a good remedy both for the prevention and cure of any kind of itch or ſcab in cows; while, at the ſame time, it has this advantage, that the application does not injure the general health of the animals, or cauſe any great degree of *nauſea*. I hope and wiſh that all this may be ſo; but I cannot affirm it from any experience of my own.

Diſappointed in theſe and other inſtances, I was on the point of giving up belief in ſpells and inchantments altogether, and renouncing the whole ſyſtem as abſurd in theory, and uſeleſs in practice, when I was agreeably ſaved from incredulity, by meeting with a paſſage in an old author, one Mr Pliny, who writes on this, among other ſubjects. In this paſſage, which I am about to quote for the edification of the public, he makes mention of a particular charm or ſpell, or call it what you will, which is found to be poſſeſſed of extraordinary virtue in improving the quality and increaſing the quantity of grain or other produce on any given ſpot of ground. Now, this is preciſely what I had always wiſhed and hoped to diſcover myſelf, and it is a ſecret which, I preſume, many a farmer will be glad to learn.

I am well aware, that, in this enlightened age, I ſhall be laughed at by ſome, and abuſed by others, for giving any degree of credit to *ſuch ſtuff*, as they will call it, and for preſuming to obtrude it on the public. But let not a generous public be biaſſed againſt me or my diſcovery. I am going to whiſper ſomething into the ears of thoſe gentlemen who may laugh at me, which they are little dreaming of. THE CHARM HAS ACTUALLY BEEN TRIED BY ONE OR TWO RESPECTABLE FRIENDS OF MINE TO WHOM I GAVE THE HINT (I have not tried it as yet myſelf), AND IT HAS ANSWERED AMAZINGLY. Seeing is believing. I am ready

ready to atteſt the fact, and ſhall leave my name with your publiſher for a reference. But as I do not chooſe to be troubled with impertinent inquiries, I make this proviſo, that every perſon, before receiving my name and deſignation from the Publiſhers, ſhall produce a certificate, ſigned by at leaſt three reſpectable farmers, bearing that he has made a fair trial of the charm I am now about to publiſh, and that it has failed in his hands.

One thing I beg leave to aſſure your readers of, that it is perfectly innocent. It may be uſed with the utmoſt ſafety, as, like the remedies mentioned above of the horſe ſhoe and roun-tree, if it does no good, it will do no harm. It is likewiſe cheap. Let me earneſtly requeſt them, then, to give it a fair trial, and, perhaps, many a one who can talk very wiſely about agriculture, who reads, yea who writes on agriculture, may come to bleſs the day on which he read this letter, and complied with my requeſt.

I ſhall now, without farther comment, leſt you ſhould think me tedious, give you the paſſage alluded to above, tranſlated from the original, as it is written in a foreign tongue, of which I have a ſmattering. It may be found in the ſixth chapter of his eighteenth book, and is as follows.

One Creſinus was obſerved to draw greater returns in grain and fruit from a very ſmall farm poſſeſſed by him, than his neighbours could do from much larger poſſeſſions. He was naturally ſuſpected of employing magic, by which he was enabled to make the corn deſert his neighbours' fields, and come over to his own. The neighbourhood, being alarmed, entered a complaint againſt him to a Juſtice of the Peace, who ordered him to appear before the quarter-ſeſſions; which court, in that country, was held in the market-place, and in the open air.

Farmer Creſinus, ſeeing that matters were like to go hard with him, as the preſumptions of his guilt were very ſtrong, reſolved, that inſtead of endeavouring to protract the buſineſs, by uſing the ſhifts and quirks of law, he would diſcover his whole ſecret at once, and throw himſelf on the mercy of the court. So, on the day appointed, he made his appearance with his only daughter, who was an accomplice (a ſtout, clever girl); he likewiſe brought all his trumpery into court, conſiſting of ploughs, harrows, ſpades, mattocks, &c.; all of the beſt materials and workmanſhip, and all his own workmanſhip too; for in theſe days every man was his own wright and ſmith. He even brought his working cattle (the court-room, being large, could eaſily hold them), all of them ſtrong and in good keeping. He then addreſſed his judges as follows: '*Veneficia mea, Quirites, hæc ſunt. Nec poſſum vobis oſtendere, aut in forum adducere lucubrationes meas, vigiliaſque ac ſudores.*' That is, 'Theſe are my ſpells, Gentlemen; there is my magic. But I cannot ſhow you, or bring

bring into court, the other charms I have employed; my toil and ſweat, my early riſing and late going to reſt.'

'This ſtory has a moral, and, no doubt,
You all have ſenſe enough to find it out.'

I am, Sir, your moſt obedient Servant, OBERON.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*A Propoſal for eſtabliſhing Schools, wherein Practical Agriculture might be Taught.*

SIR,

I AM now reſiding with a friend in the neighbourhood of Edinburgh, and am moſt forcibly ſtruck with the careleſs, ſlovenly manner of his farm ſervants. This induces me to ſend you this letter, in hopes that ſome of your correſpondents will point out the beſt mode of removing this very general complaint among agriculturiſts.

Farm ſervants are in many caſes ignorant of the proper modes of performing the ſeveral operations of agriculture and the management of cattle; ſuch as herding, driving, cleaning, feeding, &c.; or ploughing, ſowing, harrowing, rolling, &c.; and their general deportment is often careleſs and diſguſting. Not poſſeſſing any ſenſe of ſhame, they think nothing of breaking or loſing implements, deſtroying food, or injuring cattle; and a hundred reproofs from the maſter ſerve no end but that of irritating his own mind, and confirming his reſolution of turning them off at next term time. Thus ſervants paſs from one maſter to another without gaining amendment. *

There are many cauſes that contribute to this evil; but the principal one is the little attention maſters pay to the inſtruction of their ſervants when young; or if they do in any degree, their haughty domineering manner ſerves only to create diſguſt between the parties, which can never end in advantage to either. But, in place of this, were maſters patiently to inſtruct them in a mild conciliating way, joined at the ſame time with firmneſs and determination, convincing them it was equally for their own advantage to do things properly, &c. ſervants might then become expert at performing every operation, and decent and tractable in their behaviour; the great benefit of which would be felt by all parties ever afterwards.

Servants

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* Something too might be ſaid reſpecting the behaviour and cleanlineſs of female farm ſervants; but this ſubject is ſo excellently treated in a late number of the Scots Magazine, that I cannot do better than refer every houſewife to theſe well written papers.

Servants (I think) have become much worſe ſince the ſize of farms have been increaſed; and, from the ſtyle and mode of life that farmers have now got into, few of them have ſuch a virtuous taſte as to engage in the reformation or inſtruction of their ſervants. It appears vain, therefore, to imagine that this evil will be remedied by every individual farmer inſtructing his own ſervants. What appears to me the only probable method, would be to eſtabliſh farming ſchools, where young people, before they commenced FARM SERVANTS in general, would be taught how to perform every operation of agriculture and rural œconomy, the duty of ſervants to maſters, &c.

What I call a ſchool, might juſt be a farm managed by a farmer ſuppoſed to have a ſuitable temper, diſpoſition, and abilities. Such ſchools ſhould be diſtributed here and there throughout the country, ſo as farmers of every deſcription may have proper ſervants; and that thoſe farmers at a diſtance may change, as it were, the kind of ſervants, if they chooſe, by ſending to a different ſchool (which would tend alſo to improve agriculture). A committee of ſubſcribers ſhould be appointed to eſtabliſh theſe ſchools, direct their general management, and inſpect them annually. When in the field, they might perform every operation in agriculture, and anſwer many queſtions reſpecting cattle and other ſubjects to the committee. Former pupils might alſo attend to compete for premiums, which would keep up a proper ſpirit of emulation over the whole country. *

To indemnify the farmer choſen as ſchoolmaſter for theſe ſchools, he ſhould be allowed one or more years ſervice, according to the age, ſtrength, &c. of the pupils; upon providing them with victuals during that time; or upon victuals and ſo much money for clothes, in the caſe of ſome ſervants who could not afford to find clothes for one year, but who might ſerve a longer time on that account.

Suppoſing theſe ſchools eſtabliſhed, the farmers of the ſurrounding country ſhould make all their ſervants paſs through them (which would make no difference in their ſcarcity any more than the preſent mode of changing ſervants does); and none ſhould hire a young man who had not previouſly attended theſe ſchools at leaſt one year, and had received a certificate of his character, abilities, and natural temper, from the ſchoolmaſter. There are many other things that will occur reſpecting the formation

* Perhaps the beſt time for this inſpection of the committee would be two or three weeks before harveſt, when they might both mow hay and reap corn (though not ripe). At another time they might plough and ſow, and perform every other part of operative work.

tion and management of theſe ſchools, which would take up too much room to mention here. I ſhall only obſerve, that the ſcheme, in every light I can view it, would be a great benefit to thoſe concerned; and tend to promote agriculture, and the general benefit of the country. But I ſhall be glad to hear the opinion of your correſpondents before I ſay any thing farther. I am, Sir, yours,

*K*———*l*, 1804. ELRONA.

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FOR THE FARMER'S MAGAZINE.

*Obſervations on the Principles of Corn Laws.*

1ſt. '*To ſecure a ſufficient ſupply of grain for the people in ordinary ſeaſons*'—Let there be a fair price, and a free market. The former will be ſecured by the alterations ſuggeſted in the late report of the committee of Parliament; the latter muſt be attained by the exerciſe of mild and firm authority in ſuppreſſing every act of violence tending to proſcribe the culture of grain, and to deſtroy the markets for it. It muſt then, of courſe, become an article of manufacture, and of internal commerce, on a more reſpectable ſcale.

2d. '*To prevent waſte of grain, to keep up a ſteady demand, and to furniſh an equable ſteady ſupply, both in bulk and in retail*'—Let corn merchants with proper capital, granaries, and ſhops, be more encouraged at home, eſpecially in large towns. This claſs of men are abſolutely neceſſary, to prevent extremes in the prices. In cheap ſeaſons they purchaſe from the farmer, and preſerve the grain from waſte; and when ſcarce, it comes out of their ſtores, and prevents famine, or even exceſſive dearth.

3d. '*To obtain a ſurplus of grain, for covering the wants of bad ſeaſons, and preventing our dependence on foreign countries, and the drainage of our treaſures*'—Let the culture of grain be not only allowed, but encouraged, for the manufactures of ſtarch, pot barley, and malt; and for the ſubſiſtence of every kind of animal uſeful in our domeſtic œconomy, particularly ſwine, poultry, and cattle; and alſo for the ſubſiſtence of horſes. Much advantage reſults from this ſyſtem in common ſeaſons, as it brings to market abundance of fat, dairy produce, poultry, eggs, ſtarch, and malt; and from the combined effect of retrenchment in bad ſeaſons, we might ſecure that ſurplus at home which, as matters now ſtand, muſt be ſought for abroad. The more grain that we can rear above what is neceſſary for the immediate uſe of man, the larger will that ſurplus be, and the more effective in bad ſeaſons. But while the application of grain in moſt of theſe purpoſes is ſo much diſcouraged, partly by the laws, and partly by an

an erroneous but common prejudice, the immenſe advantages of ſuch a ſyſtem, both in favourable and bad ſeaſons, muſt be given up.

4th. '*To provide againſt the failure of any particular kind of grain*'—Let the culture of all the varieties and kinds be encouraged, on the moſt extenſive ſcale, and in full crops. Then may wheat, oats, and barley mutually ſupply each other's deficiencies; and peas, beans, and rye may be uſeful auxiliaries: whereas, by diſcouraging the culture of any of theſe kinds of grain, particularly wheat, oats, or barley, a ſeaſon may come that ſhall be adverſe to the grain moſtly cultivated, and yet would poſſibly have been favourable to the kind that has been injudiciouſly laid aſide: the conſequences muſt then be ſerious. This matter may ſoon come to be felt, inſtead of being dreaded, if the culture of barley continue to decline, as it does rapidly at preſent.

5th. '*To obtain ſubſtitutes for grain*'—Let the culture of roots and greens be encouraged. It would be difficult to compute the benefits derived from the uſe of potatoes: and when cabbages, greens, turnips, and other eſculents are alſo reared, the ſoil is improved by the variety of its productions; the public have the comfort of that variety; there is a large addition, not only of roots and green articles, but alſo of milk, butter, and cheeſe, and of fat, for their ſupport: and the complicated advantages are very important.

6th. '*If the policy of our laws ſhall prefer any one kind of grain before another*'—Then we ſhould encourage that grain which is moſt productive of meal, and leaſt ſevere on the ſoil; or, in other words, the grain moſt favourable to an improved culture of the earth. It requires no evidence that barley is this kind of grain. The culture of barley is favourable to the community in every view: It is an early grain, very productive in meal from an acre, and favourable to the increaſe of produce, by means of increaſing fertility. Wheat and oats are, comparatively, robbers of the ſoil, and unfavourable to the views of enlarged produce by good culture. Yet wheat and oats have met with no diſcouragement, when the taxes on manufactured barley have almoſt proſcribed both the uſe and the culture of this valuable grain.

7th. '*To recover the immenſe advantages of an export trade in grain*,'—and thereby to increaſe the manufacture and commerce of Britiſh grain, and to draw the treaſures of leſs induſtrious nations in exchange for it, are objects of very great importance, yet not eaſily to be attained. The charges on arable lands are ſo high in Britain, that great difficulties occur in contending with other nations, where the culture of grain is leſs expenſive. Bounties on exported grain readily offer themſelves as a mean for accompliſhing this object. But why not encourage the export of

grain in a manufactured ſtate, on a more liberal plan? Spirits, ſtrong ale, ſtarch, ſplit-peas, meal and flour, pot-barley, and every other product of grain, appear to be entitled to encouragement for exportation. What a ſource of valuable labour, improving cultivation, and advantageous commerce, would this export trade afford us? What a valuable additional ſecurity againſt want and dependence, and what an extended ſtimulus to the ample production of corn? The difficulties in the way are great; yet we truſt the patriotiſm, genius, and ſpirit of the country, may be able to ſurmount them, and to ſave a drainage of treaſure, which no other nation but Britain could have afforded, and to which, after thirteen years experience, all agree that it is neceſſary to put an end.

*Kirkpatrick Manſe*, 1804. WM. SINGERS.

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*Report from the Committee on Recommitted Report reſpecting the Corn Trade. Ordered to be printed 14th June* 1804.

THE Committee, to whom the Report was recommitted, which was made from the Committee who were appointed to conſider of ſo much of the ſeveral petitions of land-owners, barley-growers, maltſters, and others, in the counties of Norfolk, Suffolk, Stafford, Warwick, Eſſex, and Lincoln, which were preſented to the Houſe upon the 15th and 29th days of February, and the 28th and 29th days of March laſt, as relates to an act paſſed in the 31ſt year of his preſent Majeſty, for regulating the importation and exportation of corn, and the payment of the duty on foreign corn imported, and of the bounty on Britiſh corn exported, and to report the ſame, with their obſervations thereupon, to the Houſe; and to whom the ſeveral accounts and papers, which have been preſented to the Houſe in the preſent Seſſion of Parliament, reſpecting corn, grain, and malt, were referred;—Have, in purſuance of the inſtructions which they received, proceeeded to examine the act of the 31ſt of the King, and to take, from the beſt information they could obtain, a comparative view of the price of labour, and of the unavoidable expences incident to the grower, in the year 1791, and at this time, as the beſt criterion by which they might judge of what ought to be the price of the different ſpecies of grain, allowing to the grower ſuch a fair and reaſonable profit as may induce him to purſue that line of huſbandry which will the moſt contribute to the production of ſuch an ample ſupply of the different kinds of corn and grain, as may be ſufficient for our conſumption. This ſupply cannot be expected without a conſiderable ſurplus, in plentiful years, above the demand of the home market: it therefore becomes deſireable, that the grower ſhould have ſuch a ready ſale for that ſurplus by exportation, and bounty if requiſite, as may remove all apprehenſion of his not being able to obtain, from a glut of the commodity at the home market, ſuch a price for that ſurplus as will afford him an equitable profit on his labour, induſtry, and capital, employed in its production. It appears, then, to your Committee, that the ſureſt mode by which an ample ſupply can be expected,

expected, is to endeavour to ſecure an uniform and reaſonable price to the growers.

Your Committee find, that the act paſſed in 1791, giving a power to the King in Council, when Parliament is not ſitting, of prohibiting the exportation of corn, if the average price thereof, taken from the return of the whole kingdom, is higher than the price at or above which foreign corn of the ſame ſort is allowed to be imported at the low duties; and to permit generally, for three months certain, the importation of ſuch ſort on the loweſt duties then payable, ought never to be exerciſed but upon a ſtrong and incontrovertible neceſſity; as it may otherwiſe operate as a great diſcouragement to the growth and production of corn in this kingdom, by rendering the market uncertain, by making the export trade liable to be ſtopped, and by enabling a general import of foreign corn to be poured into the kingdom for the term of three months, at ſo ſmall a variation and advance of price in the home market, as may perhaps be occaſioned for the purpoſe of producing that effect.

Your Committee are cautious of recommending a repeal of that part of the act, leſt a neceſſity for the exerciſe of that power might poſſibly ariſe, thinking it better, under ſuch circumſtances, that it ſhould be exerciſed according to law, than in oppoſition to it: In full confidence, that by due encouragement to the agriculture of the country, and by bringing the crown and waſte lands into cultivation, the produce of the growth of corn in the united kingdom will afford ſuch regular and ample ſupply for its conſumption, as to admit the repeal of that power given to his Majeſty's Privy Council, without the danger of any detriment ariſing therefrom to the public.

It appears to your Committee, that the price of corn from 1791 to the harveſt of 1803, has been very irregular, but upon an average increaſed in a great degree by the years of ſcarcity, has in general yielded a fair profit to the grower. The caſual high prices, however, have had the effect of ſtimulating induſtry, and bringing into cultivation large tracts of waſte land, which, combined with the two laſt productive ſeaſons, and other cauſes, have occaſioned ſuch a depreſſion in the value of grain, as it is feared will greatly tend to the diſcouragement of agriculture, unleſs maintained by the ſupport of Parliament.

Your Committee therefore recommend the tables hereto annexed, marked (A.) and (B.) to be adopted inſtead of thoſe in the act of the 31ſt of the King, as more fitted to the circumſtances of the preſent times, except ſo far as relates to the import and export from and to Ireland; and your Committee recommend as a neceſſary meaſure, that the import to Ireland from foreign parts, and the export from Ireland to foreign parts, ſhould be regulated at the ſame time upon the ſame ſcale, and to a proportionate amount, as in the annexed tables, calculated on Iriſh meaſure, and in Iriſh money.

It appears further to your Committee, that the aggregate average prices of the twelve maritime diſtricts of *England*, and of the four maritime diſtricts of *Scotland*, as particularized in the act of 1791, is the proper rule by which the tables for regulating the import of corn into

*Great Britain* ought to be governed, and that the export from each diſtrict ſhould continue to be governed as it now is, by the regulations of that act; and that the duties payable on foreign corn imported into any diſtrict where the average price thereof is below the aggregate average price of the twelve and of the four diſtricts reſpectively, ſhould be governed by the average price of ſuch diſtrict, purſuant to the annexed tables, and aſcertained by the act of 1791.

Your Committee have been induced to make an alteration in the proportion of the export prices of barley, from its being ſubject to increaſed taxation, from which other grains have been exempt; and further ſtate, that it appears to them, that there has been a balance in favour of barley for the laſt thirty-four years, while the balance has been in favour of the importation of wheat and oats. From this circumſtance, your Committee have drawn the concluſion, that that immediate relief will not be afforded to the growers of barley, which it is conceived the growers of wheat will receive, by the alterations in the importation table.

The object of your Committee, in fixing the price at which the ports ſhall be opened for the general importation of corn ſo much higher than the price at which it is permitted to be exported, is to encourage the ſurplus of one diſtrict to be ſent for the ſupply of another in want of it, that the import into one part of the kingdom, and the export from another at the ſame time, may thereby be checked, and the prices throughout the kingdom be made more equal.

With this view, your Committee recommend the adoption of meaſures calculated to promote the intereſts of the grower, conceiving that a due encouragement to agriculture is the beſt and moſt effectual mode of enſuring to the conſumer an adequate and regular ſupply, at a reaſonable rate, as well as of obviating thoſe frequent fluctuations in price ſo injurious both to the grower and the public; and alſo in future to ſecure to this country, as far as poſſible, the advantage of ſuch enormous ſums, as your Committee find, have exceeded thirty millions in the laſt thirteen years, which ſums, employed in the purchaſe of corn abroad, cannot fail to have operated as a bounty upon the agriculture of foreign countries, to the detriment of our own; whereas it appears by the corn returns, that in the courſe of years, when the regulations were moſt favourable to the growers, and when the leaſt check was put upon the trade, the export of corn from this kingdom, for more than ſixty years in ſucceſſion, produced annually ſix or ſeven hundred thouſand pounds, leaving beſides, at a regular and moderate price, an ample ſufficiency for the home conſumption.

TABLE (A), ſhewing the Prices to which the ſcale of Bounty is to attach on the Export of Corn, Ground Corn, Flour or Meal, Malt, &c.; and the Prices at which the Exportation is prohibited.

| WHEAT, when exported to any foreign country. | s. | d. |
|---|---|---|
| If at or under 48s. *p.* qr.—bounty | 5 | 0 |
| If above 48s. and not exceeding 52 —do. | 2 | 6 |
| If above 52s. no export allowable. | | |

| RYE. | s. | d. |
|---|---|---|
| If at or under 32s. *p.* qr.—bounty | 3 | 0 |
| If above 32s. and not exceeding 34s. —do. | 1 | 6 |
| If above 34s. no export allowable. | | |

Table

TABLE (A) continued.

PEAS and BEANS.

| | s. | d. |
|---|---|---|
| No export allowable when above 34s. *p.* qr. | | |

BARLEY, BEER or BIGG.

| | | |
|---|---|---|
| If at or under 28s. *p.* qr.—bounty | 2 | 6 |
| If above 28s. and not exceeding 30s. —do. | 1 | 3 |
| If above 30s. no export allowable. | | |

OATS.

| | | |
|---|---|---|
| If at or under 16s. *p.* qr.—bounty | 2 | 0 |
| If above 16s. and not exceeding 18s. —do. | 1 | 0 |
| If above 18s. no export allowable. | | |

WHEAT FLOUR, *i. e.* BISCUIT.

| | | |
|---|---|---|
| High bounty *p.* cwt. | 1 | 6 |
| Low do. *p.* do. | 0 | 9 |

WHEAT MEAL.

| | s. | d. |
|---|---|---|
| High bounty *p.* cwt. | 1 | 3 |
| Low do. *p.* do. | 0 | 7¼ |

RYE MEAL or FLOUR.

| | | |
|---|---|---|
| High bounty *p.* cwt. | 0 | 9 |
| Low do. *p.* do. | 0 | 4½ |

BARLEY, BEER, or BIGG MEAL.

| | | |
|---|---|---|
| High bounty *p.* cwt. | 0 | 10 |
| Low do. *p.* do. | 0 | 5 |

OAT MEAL.

| | | |
|---|---|---|
| High bounty *p.* cwt. | 1 | 0 |
| Low do. *p.* do. | 0 | 6 |

N. B.—Exportation not allowable when the particular kind of grain from which the above articles are manufactured exceeds the price at which export is permitted.

TABLE (B), shewing the Prices according to which High or Low Duties are to take place on Importation.

WHEAT, when imported from the province of Quebec, or the other British colonies or plantations in North America:

| | s. | d. |
|---|---|---|
| If under 61s. *p.* qr.—duty | 24 | 3 |
| If at or above 61s. but under 65s. —do. | 2 | 6 |
| If at or above 65s.—do. | 0 | 6 |

When imported from any other foreign country:

| | | |
|---|---|---|
| If under 63s. *p.* qr.—duty | 24 | 3 |
| If at or above 63s. but under 66s. —do. | 2 | 6 |
| If at or above 66s.—do. | 0 | 6 |

RYE, BEANS, PEAS, when imported from the province of Quebec, or the other British colonies or plantations in North America:

| | | |
|---|---|---|
| If under 40s. *p.* qr.—duty | 22 | 0 |
| If at or above 40s. but under 43s. —do. | 1 | 6 |
| If at or above 43s.—do. | 0 | 3 |

When imported from any other foreign country:

| | | |
|---|---|---|
| If under 42s. *p.* qr.—duty | 22 | 0 |
| If at or above 42s. but under 44s. —do. | 1 | 6 |
| If at or above 44s.—do. | 0 | 3 |

BARLEY, BEER, or BIGG, when imported from the province of Quebec, or the other British colonies or plantations in North America:

| | | |
|---|---|---|
| If under 30s. 6d. *p.* qr.—duty | 22 | 0 |
| If at or above 30s. 6d. but under 32s. 6d.—do. | 1 | 3 |
| If at or above 32s. 6d.—do. | 0 | 3 |

When imported from any other foreign country:

| | | |
|---|---|---|
| If under 31s. 6d. *p.* qr.—duty | 22 | 0 |
| If at or above 31s. 6d. but under 33s.—do. | 1 | 3 |
| If at or above 33s. | 0 | 3 |

Importation of WHEAT MEAL and FLOUR, to be governed as follows:

When imported from the province of Quebec, or the other British colonies or plantations in North America:

| | | |
|---|---|---|
| High duty *p.* cwt. | 6 | 6 |
| First low duty *p.* do. | 1 | 6 |
| Second do. | 0 | 2 |

When imported from any other foreign country:

| | | |
|---|---|---|
| High duty | 6 | 6 |
| First low do. | 1 | 6 |
| Second do. | 1 | 0 |

OATS, when imported from the province of Quebec, or the other British colonies or plantations in North America:

| | | |
|---|---|---|
| If under 20s. *p.* qr.—duty | 6 | 7 |
| If at or above 20s. but under 21s. —do. | 1 | 0 |
| If at or above 21s.—do. | 0 | 2 |

When imported from any other foreign country:

| | | |
|---|---|---|
| If under 21s. *p.* qr.—duty | 6 | 7 |
| If at or above 21s. but under 22s. —do. | 1 | 0 |
| If at or above 22s.—do. | 0 | 2 |

TABLE (B) continued.

| | s. | d. |
|---|---|---|
| OAT MEAL, when imported from the province of Quebec, or the other British colonies or plantations in North America: | | |
| If under 19s. *p.* boll of 140 lib. Avoirdupois, or 128 lib. Scotch Troy—duty *p.* boll | 8 | 0 |
| If at or above 19s. *p.* boll but under 20s.—duty | 1 | 0 |
| If at or above 20s.—do. | 0 | 2 |
| When imported from any other foreign country: | | |
| If under 20s. *p.* boll—duty | 8 | 0 |
| If at or above 20s. but under 21s. —do. | 1 | 0 |
| If at or above 21s.—do. | 0 | 6 |

| Importation of INDIAN CORN or MAIZE, to be governed by the price of barley as follows: | s. | d. |
|---|---|---|
| When imported from the province of Quebec, or the other British colonies or plantations in North America: | | |
| High duty *p.* qr. | 22 | 0 |
| First low do. | 1 | 3 |
| Second do. | 0 | 3 |
| When imported from any other foreign country: | | |
| High duty | 22 | 0 |
| First low do. | 1 | 3 |
| Second do. | | 3 |

Every kind of Grain, when manufactured into Malt or Meal, prohibited, excepting Wheat Meal or Flour, and Oat Meal.

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## TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*A Statement of Expences attending the Culture of Corn in* 1790 *and* 1804, *presented to the Committee of the House of Commons by the Proprietors and Farmers of Norfolk. With some Desultory Observations thereupon,*

SIR,

A PETITION was lately presented to Parliament from this county, complaining of the hardships sustained by agriculturists from impolitic corn laws and the heavy duty upon malt; and I send you a statement, drawn up by an intelligent agriculturist, in support of the petition which was laid before those in power, and received much attention. Perhaps some parts of the statement may be considered as objectionable, because the value of crops during a whole rotation is not precisely marked down; but whatever weight may be attached to this circumstance, I venture to assure you, that the statement is correct, so far as respects the value of labour at the periods mentioned, therefore entitled to the serious consideration of every agriculturist.

### STATEMENT.

| Rate of Rents, and various Charges on Arable Farms, previous to the year 1790, in the western part of Norfolk. | Rate of Rents, and various Charges on Arable Farms, at this time, in the same District. |
|---|---|
| The rent, 10s. and 15s. *p.* acre. | Now, 15s. to 18s. *p.* acre. |
| Tithes, 2s. to 2s. 6d. *p.* do. | —— 3s. 6d. 4s. and 5s. *p.* do. |
| Poor's rates, 1s. and 2s. 6d. | —— 3s. 4s. and 5s.; in many places more |
| Labour, 14d. *p.* day. | —— 2s. |
| Thrashing wheat, 1s. 8d. *p.* qr. | —— 3s. 6d. *p.* qr. |
| Do. barley, 10d. *p.* do. | —— 1s. 6d. *p.* do. |

And for other grain thrashing in like proportion.

Ditching

| | |
|---|---|
| Ditching or fencing 1s. 3d. *p.* rood. | Now, 2s. and 2s. 3d. *p.* rood. |
| Filling and ſpreading clay, 21s. *p.* hund. | —— 30s. *p.* hund. |
| Do. do. muck, 18s. *p.* do. | —— 25s. *p.* do. |
| Cutting and harveſting corn, 5s. *p.* acre. | —— 8s. *p.* acre. |
| Oil-cake for manure, 4l. *p.* ton. | —— 7l. and 8l. *p.* ton. |
| Ditto for feeding cattle for the ſake of manure, from 7l. to 9l. *p.* ton. | —— 12l. *p.* do. |

BLACKSMITHS.

| | |
|---|---|
| Shoeing cart horſes, 3d. *p.* ſhoe. | Now, 7d. *p.* ſhoe. |
| Tire for carriage wheels, and for other iron work, 3½d. *p.* lib. | —— 5½d. *p.* lib. |

WHEEL-WRIGHTS.

| | |
|---|---|
| Waggon, 12l. | Now, 20l. |
| Cart, 2l. | —— 3l. 10s. |

COLLAR-MAKERS.

| | |
|---|---|
| Geers or harneſs for 4 horſes, from 7l. to 9l. | Now, 12l. and 14l. |
| Traces, 6d. *p.* lib. | —— 9d. *p.* lib. |

All day-work and jobbing by the above three branches of trade are advanced in a much higher proportion.

The Expences of growing a Barley Crop prior to the Year 1790 may be eſtimated as follows:

First, The TURNIP CROP as a Preparative.

| | | | |
|---|---|---|---|
| Three ploughings, &c. at 3s. 6d. *p.* acre | L. | 0 | 10 6 |
| Muck, ten load *p.* acre, and cartage | | 1 | 12 6 |
| Filling and ſpreading | | 0 | 1 8 |
| Seed and hoeing | | 0 | 7 0 |
| Rent, 10s.; tithes, 2s.; town charges, 1s. | | 0 | 13 0 |
| | L. | 3 | 4 8 |
| The then average value of turnips *p.* acre | | 1 | 10 0 |
| Deficiency or loſs | L. | 1 | 14 8 |

in the Turnip Crop, to come out of the ſucceeding Barley Crop.

| | | | |
|---|---|---|---|
| Three ploughings, &c. for barley | L. | 0 | 10 6 |
| Seed, three buſhels, at 20s. *p.* quarter | | 0 | 7 6 |
| Rent, tithes, and town charges | | 0 | 13 0 |
| Harveſting | | 0 | 5 0 |
| Thraſhing 3½ quarters.; the average produce *p.* acre at 10d. *p.* quarter | | 0 | 3 0 |
| Carrying out to market | | 0 | 3 0 |
| | L. | 3 | 16 2 |
| The average produce 3½ quarters, at 20s. *p.* quarter | | 3 | 10 0 |
| Loſs *p.* acre on a barley crop | L. | 0 | 6 2 |

* Thus it appears, on a fair calculation of expences, that a barley crop, even at the old rate of rents, tithes, labour, and poor rates, was by no means a profitable crop, at the general average of 3½ quarters per acre; and that the profit of arable land, under this ſyſtem of management, muſt be derived more from the ſtock kept on the ſame during the ſucceeding two years lying in graſs, and the following wheat crop on the flag upon one earth, than on the barley crop, whilſt this grain is at ſo low a price. And for the further deficiency or loſs in this crop, occaſioned by the increaſed rate of rents, &c. &c. &c. and low price of barley, ſee as follows.

TURNIP

TURNIP CROP, 1804.

| | | | |
|---|---|---|---|
| Three ploughings at 5s. | | L. 0 | 15 0 |
| Mucking, ten load *p.* acre, at 3s. *p.* load, and cartage 1s. | | 2 | 0 0 |
| Filling and ſpreading, 2½d. *p.* do. | | 0 | 2 0 |
| Seed and hoeing | | 0 | 7 6 |
| Rent, 15s.; tithes, 3s. 6d.; town charges, 2s. | | 1 | 0 6 |
| | L. | 4 | 5 0 |
| Average value of one acre of turnips | | 2 | 5 0 |
| Deficiency or loſs on the turnips at this time | L. | 2 | 0 0 |

| | | | |
|---|---|---|---|
| For ſucceeding barley crop, three ploughings at 5s. | L. | 0 | 15 0 |
| Seed, three buſhels at 20s. *p.* quarter | | 0 | 7 6 |
| Rent, 15s.; tithe, 3s.; town charges, 2s. | | 1 | 0 0 |
| Harveſting, at 7s. 6d. *p.* acre | | 0 | 7 6 |
| Thraſhing, 3½ quarters at 1s. 6d. *p.* quarter | | 0 | 5 3 |
| Carting to market | | 0 | 4 8 |
| Add | | 0 | 0 1 |
| | L. | 5 | 0 0 |
| To 3½ qrs. of barley, the average produce at the preſent average price 20s. | | 3 | 10 0 |
| Deficient | L. | 1 | 10 0 |

'Thus the loſs on the barley crop at the preſent time appears to be four times more than it was prior to the year 1790; whilſt the price of fat meat, and that of wheat, the next ſucceeding crop of corn, to both of which we ought to look for replacing the deficiency, are alſo much reduced in value; and the occupiers ſubject at the ſame time to the increaſed charges or taxes on horſes, and other aſſeſſed taxes, and ninepence in the pound on their rack-rent as on income, which income, I fear, in very few inſtances, as corn now ſells, can have any real exiſtence, and will be found an oppreſſive meaſure, and the tax with great difficulty raiſed. To theſe ſtatements may be added, the intereſt of, at leaſt, 5l. per acre, being the value of capital employed, as alſo an allowance for the farmer's time, all which ought to be taken into account.—It may not be improper to add, that as, at leaſt, four fifths of the lands, lately brought into cultivation by encloſure, &c. &c. are of that quality that they cannot be kept in a proper ſtate of tillage, but at an extra expence to lands of ſuperior quality, at the preſent price of corn, theſe muſt, in great part, go out of cultivation; and every agriculturiſt well knows, that if laid down to paſturage again, fifty years will not return them to as good an herbage as they were taken from. Thus, for the firſt two or three years they may grow ſomething, the next ten nothing; next five very little, and ſo on; by which a certain loſs to the community muſt be experienced, and oftentimes large ſums of money again expended for the importation of corn, which I have not the leaſt heſitation of affirming might, and will be grown in the United Kingdom, if the ſpirit of agriculture is kept on by a fair remunerating price of corn; while the ſmall extra price to the preſent price of corn, it muſt be recollected, will revert back again to the conſumer in every branch of trade, who, I take the liberty of aſſerting, directly or indirectly, feels more or leſs the effect of the oppreſſion the agricultural intereſt ſuſtains at this moment.'

I feel ſome heſitation in admitting the opinion given in the above ſtatement, that a quantity of corn may at all times be grown in this iſland ſufficient for the conſumpt of its inhabitants, were the preſent ſpirit of agriculture kept up by a fair remunerating price. My reaſons for heſitating to concur in this opinion, ſhall be given in a few words, leaving you to judge of their validity.

The quantity of corn raiſed in different years, muſt be regulated in a great meaſure by the temperature of the weather which prevails in each: hence, it is no uncommon thing for farmers, in ſome ſeaſons, to have one fourth, nay, even one third more produce from the like extent of ground than what they have in others. The ſeaſons are not under the controul or direction of Parliament; therefore any thing that can be done by the Legiſlature muſt prove inſufficient for accompliſhing a regular and permanent ſupply of home corn to the inhabitants of Great Britain. I grant, that a ſtimulus to agriculture may be obtained by ſecuring the home market to a certain degree, excluſively, in favour of our farmers; but that a quantity of corn can *at all times* be grown at home ſufficient for the conſumpt of the people, I can by no means admit. To be ſure, if agriculture is ſtimulated and excited, the deficiency ariſing from bad ſeaſons will be leſs felt than if encouragement had been withheld; therefore I acknowledge that a fair remuneration to the grower is the beſt method of procuring the greateſt poſſible ſupply of grain at all times.

The price of corn may, in ſome ſmall degree, be affected by other cauſes, though ſo trifling as hardly to deſerve notice. During the late war, when wheat advanced to 160s. per quarter, and barley to 80s. I was conſidered by many people as deſerving a ſtrait jacket, becauſe, in defiance of the general ſentiment, I maintained that war was not the cauſe of theſe extravagant prices. It was in vain that I urged the ſtate of the corn trade during former wars, particularly during the American conteſt, when corn was literally a drug in the market. Indeed, the prices of the paſt year furniſh a ſtrong corroborative proof that the corn trade is influenced little either by war or peace; but that ſeaſons are altogether the barometer, if I may uſe the expreſſion, which regulate the market value. If good crops are procured for two or three years ſucceſſively, corn will be plentiful, conſequently muſt be cheap; whereas, if we are viſited with a ſeaſon or two of an adverſe kind, ſuch as 1799 and 1800, ſcarcity and advanced prices will ſurely follow. In a word, the more I conſider the opinion now examined, the impracticability of gaining a regular and conſtant ſupply of grain more clearly appears.

I am, yours, &c.

*Norfolk*, 1804. A Friend to Agriculture.

Excerpts

EXCERPTS *from the Report of the Committee appointed to inquire whether any, and what Difference ought to be allowed in the Rate of Duty payable on Malt made from Barley of the Growth of England, and from Barley and Bigg of the Growth of Scotland.*

YOUR Committee find, that a tax on malt was originally eſtabliſhed in England during the troubles in the reign of Charles I.; but it is unneceſſary, upon the preſent occaſion, to trace it farther back than to the year 1697, when by an act (8th and 9th William III. cap. 22.) a duty of 6d. per buſhel was impoſed on malt, and proportionable ſums on certain liquors, as cyder and perry, which might otherwiſe prevent the conſumption of that article. It was at firſt given for two years and a quarter, but for many years paſt it has only been granted from year to year, and hence it is known by the name of the 'Annual Malt Tax.'

The exigencies of the ſtate, however, ſoon rendered it neceſſary to impoſe heavier duties upon ſo extenſive an article of conſumption; and in later times, theſe additional taxes, inſtead of being temporary, were made permanent, for the purpoſe of defraying the intereſt of various loans. The firſt permanent duty was impoſed *anno* 1760, at the rate of 3d. per buſhel; a further tax of 15 *per cent.* was granted *anno* 1779; and an additional permanent duty of 6d. $\frac{1}{4}\frac{2}{10}$ per buſhel was impoſed *anno* 1780. As it became difficult, however, to collect theſe permanent taxes, and to keep the accounts ſeparate, whilſt they conſiſted of ſuch minute fractions, they were conſolidated in the year 1787, and one permanent tax, to the amount of 9¼d. per buſhel, was impoſed. But the nature of this tax was changed, when the plan for redeeming the land-tax was adopted; for as it became neceſſary to ſubſtitute a ſure and productive revenue, in lieu of that branch, the above mentioned permanent tax on malt was among others ſelected, and ever ſince it has likewiſe been annually granted, as a ſubſtitute for the annual land-tax.

In the year 1802, an addition was made to the former duties on malt to the amount of 1s. ¼d. per buſhel; which was of a permanent nature; and in 1803, a further tax, at the rate of two ſhillings per buſhel, was impoſed, to continue during the preſent war, and for ſix months after its concluſion.

The following, then, are the taxes on malt now payable in England:

| | | *Per Buſhel.* | | |
|---|---|---|---|---|
| 1. Old annual malt tax - - - - - | L. | 0 | 0 | 6 |
| 2. Annual malt tax, in lieu of the annual land tax | | 0 | 0 | 9¼ |
| Total annual | L. | 0 | 1 | 3¼ |
| 3. Permanent malt tax, *anno* 1802 - - - - | | 0 | 1 | 0¼ |
| 4. Temporary malt tax, to continue during the war, granted *anno* 1803 - - - - - | | 0 | 2 | 0 |
| Total duties on malt in England | L. | 0 | 4 | 4 |

In the Appendix, a particular account is given of the malt tax in Scotland. It appears from that detail, and from the information

tion which De Foe furniſhes in his Hiſtory of the Union, that the Scotiſh Commiſſioners, when the treaty was negociating, ſtruggled earneſtly to be totally exempted from any tax on malt. But the difference between the two countries, in regard to this important particular, was at laſt compromiſed in the following manner, that Scotland ſhould be exempted from the malt tax during the continuance of the war which then ſubſiſted, after which any further exemption was referred to the Parliament of Great Britain, with this expreſs declaration, in the words of the 14th article of the Union, 'That it cannot be ſuppoſed the Parliament of Great Britain will ever lay any burden, but for the good of the whole, and with due regard to the abilities and circumſtances of every part of the United Kingdom.'

In 1713, the annual malt tax of 6d. per buſhel was firſt extended to Scotland; but after a trial of twelve years, it was thought adviſeable, in 1725, to reduce it to one half of that ſum; and during the whole period, from 1725 to 1802, the malt made in Scotland was only charged one half of the rates impoſed in England. The taxes granted in 1802 and 1803, however, were extended over the whole iſland, with the exception of 8d. per buſhel on bigg, which was deducted from the laſt duty. The taxes on malt, therefore, payable in Scotland, are as follow:

| | | | *Per Buſhel.* |
|---|---|---|---|
| 1. Old annual malt tax | L. | 0 0 | 3 |
| 2. Annual malt tax, in lieu of annual land tax | | 0 0 | $4\frac{7}{12}$ |
| Total annual | L. | 0 0 | $7\frac{7}{12}$ |
| 3. Permanent malt tax, *anno* 1802 | | 0 1 | $0\frac{5}{12}$ |
| 4. Temporary malt tax of 1803, to continue during the war | | 0 2 | 0 |
| Total tax on Scotch barley | L. | 0 3 | $8\frac{1}{3}$ |
| Deduction in favour of Scotch bigg, *anno* 1803 | | 0 0 | 8 |
| Total tax on Scotch bigg | L. | 0 3 | $0\frac{1}{3}$ |

The following, therefore, are the duties on malt, whether made of barley or bigg, now payable in the two countries:

| | | | |
|---|---|---|---|
| 1. On malt made of Engliſh barley | 0 | 4 | 4 |
| 2. On malt of Scotch barley | 0 | 3 | $8\frac{1}{3}$ |
| 3. On malt of Scotch bigg | 0 | 3 | $0\frac{1}{3}$ |

Such are the preſent rates; but it is to be obſerved, that, during a period of ſeventy-ſeven years prior to 1802, the difference was ſtill greater, Scotch malt paying only one half of the duty charged on Engliſh malt.

In writings on Natural Hiſtory, barley is divided into four ſorts; but, for our preſent purpoſe, it is only neceſſary to conſider two of them, namely, the two-rowed barley, and that inferior ſort, commonly known under the name of bigg or bear.

The two-rowed barley is of ſo ſuperior a ſort, that it is always cultivated where it is poſſible to raiſe it with advantage. Its weight is greater, the grains are larger, the huſk thinner, and the farina of a more valuable quality, yielding proportionably more ſpirits, and not only a greater quantity of malt liquor, but alſo of a much better flavour.

Bigg,

Bigg, on the other hand, is described as having a much thicker and shorter spike than the two-rowed barley; but, at the same time, a greater number of grains in an ear or spike, in the proportion of at least from three to two, and often producing even forty-two grains, when common barley has but twenty-two. The ear of bigg, it is observed, is seldom more than 2 inches in length; it is square, with two rows of grains on two of the sides, and on the other two, a single row of grains runs up the middle.

In short, it is a different species of the same genus.

Bigg, it is well known, from its hardiness, and from its not requiring the same quantity of heat, nor the same length of time to ripen it as barley, is peculiarly well calculated for cold and mountainous districts in general: but there are circumstances which render the cultivation of that grain not only proper for, but indispensably necessary to, many very extensive tracts of country in Scotland.

In the first place, no other sorts of grain, but bigg and oats, can be raised in them; and as a rotation of crops is essential for productive husbandry, were the cultivation of bigg to be discouraged, the system of agriculture the best calculated for that part of the country would be at once overturned. In the second place, bigg, from its being sown later in the season than oats, requiring more ploughings and a finer tilth, and remaining for a shorter space of time on the ground, and being less affected by wind and rain, is the species of grain by far the best calculated for laying down arable land with sown grasses; hence, the artificial herbage, and consequently the improvement of the country, and its means of maintaining live stock, whether for cultivation or food, depends upon the culture of this plant. And, in the third place, the raising of bigg is the only means by which the northern and mountainous districts of Scotland can be protected from the horrors of famine. That grain, from the quickness of its growth, can be reaped in seasons where even oats have either totally failed, or are greatly damaged by rainy harvests: It furnishes food, therefore, in those periods of calamity, and with this additional circumstance in its favour, that a mixture of bigg with damaged oats can be converted into meal, which may be made use of in times of scarcity with safety; whereas, the meal of such oats, without such a mixture, could not be used at all, or at least without injuring the health of those who might be compelled to live upon it.

On all these grounds, Your Committee are impressed, not only with the necessity of promoting the cultivation of this species of grain in the northern or mountainous districts of Scotland, but also with the policy of avoiding, as much as possible, any measure by which the quantity usually produced is likely to be diminished; and in regard to any difficulty in distinguishing malt made of bigg, from malt made of Scotch or English barley, Your Committee beg to refer to an act passed in the course of last year (43. Geo. III. cap. 145.) by which regulations are already provided 'for preventing frauds, by making of malt from bear or bigg, in Scotland.' In the Appendix, there is an account

of

of the quantity of bigg malted under that act, from midſummer to Chriſtmas 1803.

On the rate of duty which ought to be impoſed on malt made from barley of the growth of England, and from barley and bigg of the growth of Scotland.

In diſcuſſing this important part of the ſubject, Your Committee had two points under their conſideration, namely, 1. What was the average price of the barley and bigg produced in the two countries; and, 2. Whether that ought to be the ſole criterion according to which the rate of duty ought to be impoſed.

For the purpoſe of obtaining the information on the ſubject of the prices of theſe different ſorts of grain, Your Committee directed the following accounts to be laid before them: 1. The average prices of Engliſh barley, including the barley of Wales, for twelve years, ending 1ſt January 1804. 2. The average prices of Scotch barley during the ſame period. And, 3. The average prices of Scotch bigg. It may be ſufficient in this place to ſtate the totals, and the reſults.

| | *Per Quarter.* | | |
|---|---|---|---|
| Difference of price between Engliſh barley and Scotch barley, on the average of twelve years - - - - | 0 | 7 | 2¾ |
| Difference between Engliſh barley and Scotch bigg - | 0 | 10 | 5½ |

The difference between theſe prices, taking the price of Engliſh barley as the ſtandard, may be thus ſtated: Scotch barley is 19¾ *per cent.*, and Scotch bigg 28¾ *per cent.* lower than the average price of the barley of England, including Wales. Your Committee, however, find that the prices of grain, aſcertained annually by the Sheriffs of the different counties of Scotland, under the ſanction of a jury upon oath, (which are known under the name of 'the Fiars of the Year') are lower than even thoſe above mentioned. As to bigg, in particular, it appears that, for the laſt twelve years, the average price is 1l. 4s. with a ſmall fraction, or two ſhillings and five pence per quarter leſs than what is ſtated in the preceding Tables. This would make a difference of about 35 *per cent.* between the price of Engliſh barley and that of Scotch bigg.

Your Committee next proceeded to conſider, whether theſe prices ought to be accounted the ſole criterion according to which the proportion of duty on theſe articles ought to be impoſed.

Regarding this particular, it occurred, that grain of inferior quality requires more trouble and expence to manufacture it, either into ſpirits or into malt liquor, than where the article is intrinſically more valuable. For inſtance, 1,000 quarters of Engliſh barley, at the average price of 1l. 16s. 11d. per quarter, would be purchaſed for 1,845l. 16s. 8d.; the ſame ſum would purchaſe 1,395 quarters of bigg, at the average price of that grain, namely, 1l. 6s. 5½d. On the ſuppoſition that the one would produce as much ſpirits or malt liquor as the other, yet, as more trouble and expence muſt be required to manufacture 1,395 quarters than 1000, there is no doubt which article the maltſter, the diſtiller, or

the brewer would prefer. It would therefore be unreaſonable to impoſe the ſame quantum of malt-tax on the 1395 quarters of bigg, as on 1000 quarters of barley; and this obſervation muſt have additional force, when it is applied to an article, the cultivation of which, for various reaſons already ſtated, ought in particular diſtricts to be encouraged as much as poſſible.

On this point, and regarding a variety of other particulars connected with this inquiry, Your Committee beg leave to refer to the very ſatisfactory evidence given by the Reverend Doctor Skene Keith.

Under theſe circumſtances, the Committee have found it difficult to form an opinion regarding the exact proportion of duty that ought to be impoſed on all the different articles to which this report relates; at the ſame time, they have no doubt that there ſhould be a deduction from the two laſt duties, in favour of Scotch bigg, to the amount of one third thereof. As to Scotch barley, the Committee have ſtated the facts contained in the Report and the Appendix, without, however, being able to agree in any concluſive opinion upon the ſubject.

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## Excerpts *from Dr* Skene Keith's *Evidence.*

Have you applied yourſelf to agricultural and chemical inquiries?

I have applied myſelf to both. With reſpect to agriculture, I have improved my own glebe, or parſonage lands, conſiſting of about 25 Engliſh acres, at a great expence; and I have turned my attention to the Corn Laws, and to the ſale of corn by weight. In regard to chemiſtry, I have devoted a great part of my time and ſtudies to the diſtillation of ardent ſpirits, from barley, bigg, and various other materials.

Is not the county of Aberdeen one of the largeſt and moſt productive counties in the northern parts of Scotland?

The county of Aberdeen is one of the largeſt in Scotland, and one of the moſt productive in the northern parts of that kingdom. It contains about 1300 ſquare miles, or 654,000 Scotch, or 832,000 Engliſh acres in round numbers; it maintains nearly 124,000 inhabitants, or $\frac{1}{17}$th part of the population of Scotland; and it exports conſiderable quantities of oats and oatmeal, and alſo of bigg and of bearmeal.

Do they cultivate both barley and bigg in the county of Aberdeen?

Barley is very little cultivated in Aberdeenſhire, becauſe we have not heat in ſummer, except in very warm ſeaſons, for ripening barley, which is nearly one third part longer on the ground than bear or bigg is, at an average of ſeaſons. In late harveſts, ſuch as 1782 and 1799, the little barley we had was deſtroyed, which has rendered our farmers averſe to the raiſing of barley; but we cultivate bigg, generally after turnips, with ſucceſs.

What do you ſuppoſe the average quantity of each produced?

The quantity of barley is a mere trifle, as it is ſown only occaſionally by a few gentlemen farmers; and it is difficult to ſtate an average that is

is both ſo ſmall at beſt, and is alſo ſo fluctuating. I don't think that we have 200 quarters raiſed, *communibus annis*, in the whole county; perhaps little more than 100 quarters annually. But of bear or bigg we raiſe a great deal; and to give any thing like a correct idea of this, I muſt ſtate the averages at *different periods*; for a *general average* would rather miſlead, than convey uſeful information. Before the introduction of the turnip huſbandry in this county (which cannot be traced farther back than forty years, and was not general till twenty years ago) we had probably 14,000 or 15,000 Scots acres, of what we termed our *infield* lands, annually ſown with bear or bigg; and the produce varied from 35,000 to nearly 50,000 quarters, according as the ſeaſons were good or bad. *Ten* years ago, when there was a *liberal competition* between the brewers in the towns and the numerous licenſed diſtillers who were ſcattered over the county (which occaſioned a *great demand* for bear or bigg) the great wide balks, or pieces of barren land, between the ridges of our infield or old croft lands, were ploughed up, the diſtinction between infield and outfield ground was gradually aboliſhed, and a great proportion of the latter was limed and manured for a crop of turnips; and then laid down with bear and graſs ſeeds. Our agriculture at this time was rapidly advancing towards perfection; and, at this period, or from 1790 to 1799, the quantity of bear or bigg annually raiſed was more than double of what it had been twenty or thirty years before, varying from 80,000 to about 110,000 quarters, according to the goodneſs of the ſeaſons. But the greater part of the county of Aberdeen being deprived of the privileges of the intermediate diſtrict in regard to diſtillation, and being ſubjected to the ſame laws, in regard to this, to which the Lowland counties of Scotland are ſubject, all our diſtillers, except a few in the Highland diſtrict of the county, were ſtopped in 1800, as they were not able to take out licenſes on the conditions then fixed, and at the high licenſe duty impoſed on the contents of their ſtills; and by depriving us of the demand from our licenſed diſtillers, our agriculture received a very ſevere check. In 1802, it was ſtill more deeply injured by the great addition to the malt-tax, and by impoſing the ſame addition upon all kinds of malt made either in England or in Scotland; which altered ſo very conſiderably the proportion of the ratio of taxation between Engliſh and Scotch malt, and was peculiarly unfavourable to the raiſing of bear or bigg in this county. This greatly reduced the quantity of that ſpecies of grain which was ſown in 1802 and 1803; and this year I believe we will not ſow much more than we did forty years ago. The crop of 1802 was very light, and required at leaſt one fourth part to be taken off or winnowed away in the dreſſing, owing to the coldneſs of the ſummer, and the lateneſs of the harveſt; ſo that it could not afford to pay the high taxes on malt; but was either given to our cattle, or made into bearmeal, or ſtill remains unſold. I know I could not ſell my own bigg (whether my ſtipend bear, or what was raiſed on my glebe) at any price to a maltſter; and that I was obliged to get it all made into meal laſt autumn, when it ſold only at 7d. or 7½d. per Aberdeenſhire peck,

or 1s. per 14 Engliſh pounds; and that I did not clear 10s. per quarter on the worſt, nor above 16s. on the beſt bigg of 1802; being obliged to empty my ſmall granary, and to make room for the excellent bear of 1803, which is 30 *per cent.* better than what I had in 1802, and 15 *per cent.* above the medium quality. I ſuppoſe we had 70,000 quarters in 1802, and laſt year (though leſs was ſown) 75,000.

What is the average value of barley compared to bigg?

The value of barley raiſed in Aberdeenſhire is extremely unequal. But, in general, we reckon 4 quarters of good barley equal to 5 quarters of good bigg. I ſhall afterwards detail the experiments by which I aſcertained the relative values (for the purpoſe of yielding ſpirits) of bear or bigg, and of Engliſh and Scotch barley, of certain ſpecified weights per buſhel.

Is the conſumption of malt increaſing or decreaſing in the county of Aberdeen?

The uſe of malt has decreaſed very much with us, owing to the ſtoppage of our licenſed diſtilleries, the late great addition to the malt-tax, and the alterations of the proportion of malt duty on bigg, and on Engliſh and Scotch barley.

What has been the effect of the late increaſe of the duties of malt in Aberdeenſhire in regard to the quantity conſumed?

I have already ſtated, that much leſs has been conſumed, owing both to the increaſe of the duties and the alteration of the ratio of taxation; I am now to ſtate, from the books of the Collector of Exciſe, how much the quantity of malt in the Aberdeen collection has decreaſed within theſe eighteen months, owing to both theſe cauſes, and eſpecially to the alteration of the ratio of taxation.

| | | | |
|---|---|---|---|
| 1*st*, From 24th June 1802 to do. 1803, | Couch buſhels | - | 119,433 |
| - - - - do. - | Floor buſhels | - | 101,690 |
| Total of both kinds - - | Buſhels | | 221,123 |
| But as a deduction of one fifth is to be made from the couch gauge, and of one half from the floor gauge, to convert them into dry malt, the above quantity of couch buſhels amounts only to | | | 95,546.4 |
| And the above quantity of floor buſhels is only | | - | 50,845. |
| The total quantity of dry malt, paying duty from 24th June 1802 to 24th June 1803, is | | - | 146,391.4 |

| | £. | s. | d. |
|---|---|---|---|
| Paying a malt duty of 20½ per buſhel, or in all - | 12,275 | 10 | 6 |

| | | |
|---|---|---|
| 2*dly*, From June 24th to December 24th 1803, | Couch buſhels | 29,181 |
| - - - Do. - - | Floor buſhels | 35,771 |
| Groſs amount of 6 months ſince the laſt additional tax | | 64,952 |
| But after deducting as above ⅕th for the couch gauge, - - - - | Couch only | 23,344.8 |
| And after one half from the floor gauge, | Floor only | 17,885.5 |
| Total of dry malt for laſt 6 months - - | | 41,230.3 |

| | | | | |
|---|---|---|---|---|
| Paying a malt duty of 3s. ½ per buſhel, or in all | L. | 6,206 | 0 | 4 |

This

This is only 68l. 5s. 1d. more than *half* of the 12,275l. 10s. 6d. which the malt-tax produced when the duty was only $\frac{5}{9}$ of what it is ſince June laſt; and it proves both that the late increaſe of the duties on malt has produced *no addition* to the Revenue, but has been attended with a real loſs (as *ſome hundred pounds additional expences* have been incurred in collecting it); and alſo, that the people of Aberdeenſhire uſe only 5 buſhels of malt, where they laſt year uſed 9 buſhels; an equal loſs to the agriculture of the county, and to the comfortable ſubſiſtence of its inhabitants.

What is the uſual time of reaping or cutting down and harveſting barley and bigg?

This depends very much on the ſeaſon. Harveſt begins in this county at all periods from the 10th of Auguſt to the 17th of September, for cutting bear or bigg; the medium may be about the 24th of Auguſt. Barley is generally two weeks later than bear in our county, and in a late ſeaſon three or four weeks later; in which caſe, it is generally an unproductive crop. In 1782, I did not cut down my bear till the 13th of November.

With reſpect to the harveſting of bear or bigg after it is cut down, this depends upon the expoſure of the field, on the ſtate of the weather, and on its being ſown down with graſs ſeeds or not. If ſown with graſs ſeeds, in a late ſeaſon the grain lodges, and both deſtroys the graſs and alſo injures the ſubſequent crop. With many other advantages in favour of the new huſbandry, this is one of the diſadvantages of an improved cultivation, in a bad ſeaſon and a northerly climate, to which we muſt ſubmit for a greater advantage.

Have you made any experiments to aſcertain the different qualities of barley, bear, and bigg, in regard to the ale and ſpirits which each will produce? and under whoſe authority did you make theſe experiments?

I have made a number of experiments in diſtillation in the years 1799, 1802, and 1803.

The firſt was at the deſire of the Scotch Diſtillery Committee, when I was before them as an evidence in 1798, and when the Committee gave their recommendation in my favour to the Commiſſioners of Exciſe in Scotland. This firſt ſeries of experiments was therefore under the joint authority of the Diſtillery Committee of the Houſe of Commons, and of the Scotch Board of Exciſe. My parole evidence as to matters of fact, and my written anſwers to queſtions of ſcience, are printed in the Appendix to the Report of the Diſtillery Committee in 1798; and two reports of my experiments, along with a paper on the diſtillery laws, are publiſhed in the Appendix to the Report of the ſame Committee in 1799. At that time I diſtilled nine kinds of ſpirits, from malt, raw grain, carrots, and potatoes.

The ſecond ſeries of experiments was made in 1802, under the ſole authority of the Commiſſioners of Exciſe in Scotland. That year I diſtilled fifteen different kinds of ſpirits from roots, with only a ſmall proportion of malt for promoting the fermentation.

The third ſeries of experiments was conducted in 1803, alſo under the above authority; when I diſtilled various combinations of roots, raw ſugar, and lees of wine; and afterwards aſcertained, by diſtillation, the relative values of weak, middling, and good bigg, and of Engliſh and Scotch barley. I have drawn up, in a ſeparate paper, a general view of my whole experiments, to which I refer for more particular information. I only judge it neceſſary, in this place, to ſtate, that the quarter of Engliſh barley, containing 51 avoirdupois pounds per buſhel, and 10,016 barley corns in the pound, when made into malt, and properly brewed and attenuated to 9, yielded, in a medium of two experiments, 23 gallons of ſpirits, 1 to 10 above proof;—that a quarter of Scotch barley, weighing 48 pounds per buſhel, and containing 11,560 grains in the pound, malted and treated in the ſame manner, produced $18\frac{3}{7}$ of the ſame ſtrength; that a quarter of the beſt bigg, weighing 46 pounds per buſhel, and containing 14,112 bear corns in the pound, when treated in like manner, yielded $15\frac{1}{9}$ gallons;—that a quarter of middling bigg, weighing 42 pounds per buſhel, and containing 16,995 bear corns in the pound, produced $10\frac{2}{7}$ gallons of ſpirits;—and that a quarter of weak bigg, weighing 36 pounds per buſhel, and containing 21,248 bear corns in the pound, yielded $7\frac{6}{10}$ gallons, 1 to 10 above hydrometer proof.

What is the reſult of your experiments in regard to the quantum of tax that ſhould be impoſed according to the different qualities of barley and bigg?

In general it is to be obſerved, that a manufacturer ſhould have the price of the raw material, the expence of labour, the intereſt of his capital, and the rent of his premiſes, and alſo a decent profit on his trade, beſides paying the taxes of Government. It is more difficult to obtain all theſe things, when coarſe materials are uſed, than where finer are employed. But the beſt general rule would be, when the raw materials are only $\frac{3}{4}$ of the value of finer materials, to make that ſimple fraction a compound one, and call it $\frac{3}{4}$ of $\frac{3}{4}$, or $\frac{9}{16}$; which ſhould be the ratio of taxation. In like manner, if the raw materials be $\frac{2}{7}$ in value, then the tax ſhould be $\frac{2}{7}$ of $\frac{2}{7}$, or $\frac{4}{9}$ of the tax which is paid for the beſt materials. On theſe principles, the beſt judgement I can form, in conſequence of the experiments which I have conducted, and the neareſt calculation that I can make, is, that a quarter of malt from Scotch bigg ſhould pay $\frac{1}{2}$ of the duty impoſed on a quarter of malt from Engliſh barley, and that a quarter of Scotch barley ſhould pay $\frac{1}{3}$ of the Engliſh duty.

Does malt of an inferior quality, when brewed for malt liquor, yield more or leſs, proportionally, than it does when brewed for the purpoſe of diſtillation; or is it attended with more inconveniences to the brewer; and is it proportionally of more or leſs value to him than to the diſtiller?

Malt of an inferior quality, when brewed for malt liquor, yields proportionally leſs than it can do if properly diluted and brewed for the purpoſe of diſtillation. It is dangerous for the brewer to pour ſo much liquor on malt of an inferior quality as the diſtiller can do, for

fear of endangering the flavour of his liquor. The diſtiller, if he gets a greater quantity of extractive matter, is leſs intereſted about the flavour of his worts, both becauſe they have to undergo a complete attenuation and the ſubſequent proceſs of diſtillation, and alſo becauſe the flavour or quality of his ſpirits depends principally upon ſeparating from them the eſſential and empyreumatic oils when they are diſtilling. But the brewer muſt beware of ſearching too ſeverely the grains of his malt, eſpecially where this is of inferior quality; otherwiſe, he will loſe more by deteriorating the quality of his malt liquor, than he can gain by any addition to the quantity of his extract; and, therefore, high heats and a number of liquors would be deſtructive to the brewer who uſes inferior grain. Nay, in late harveſts and bad ſeaſons, it becomes neceſſary to mix either the malt or the worts of Scotch bigg with thoſe of Engliſh barley, in order to procure a palatable liquor.

Indeed, by the preſent Exciſe laws, which impoſe the whole ſpirit duty on the waſh, the Engliſh diſtiller cannot ſearch his grains ſo thoroughly as the brewer often does: but where a diſtiller is not limited in his operations by a duty on the waſh, he both can and will ſearch the malt in his maſh tun, farther than what it will be prudent for the brewer to attempt, if his grain is of an inferior quality. In conducting my experiments laſt year, I poured ſeven liquors on the malt of Engliſh barley; ſix on that of Scotch barley; five on the malt of beſt Scotch bigg; and four liquors on the two inferior kinds; trying by the ſaccharometer the ſtrength of my worts, till I rendered the grains ſo perfectly inſipid, that my horſes would not eat them. If I had been brewing ale of any kind, I would have ſtopped at five liquors, at moſt, for my Engliſh barley, four for my Scotch, and three for my malt made of bigg. My experiments, therefore, make inferior grain ſomewhat more valuable for the diſtiller than for the brewer; though they ſhew very nearly the comparative values of the different kinds of malt, even for the latter purpoſe.

Have you acceſs to know the effects of the high proportion of the malt-tax on Scotch barley and bigg, in any other part of Scotland except Aberdeenſhire?

Independently of all the private information which I could collect on this ſubject, I have examined both the printed Accounts of May 2d 1804, reſpecting the duties of Exciſe on malt made in Scotland, and alſo the Account preſented to this Committee from the Exciſe of that country on the 11th inſtant—from which I am led to draw the following concluſions:

1. The total quantity of malt made in Scotland for ten years preceding midſummer 1803, amounted to 16,244,197$\frac{1}{10}$ buſhels. But as 1795, 1799, and 1800 were unfruitful ſeaſons, and as both barley and bigg were made into meal in great quantities, and as not quite half of the uſual quantity of malt was uſed in theſe calamitous years, I throw them out of the account when forming an average; and I find that, in the other ſeven years, the quantity of malt made in Scotland amounts

to 13,473,221 $\frac{8}{16}$ buſhels, and that the yearly average is 1,924,746 buſhels.

2. The quantity malted from midſummer 1802, when the firſt alteration of the ratio of the duty on Scotch malt took place, to midſummer 1803, was nearly $\frac{1}{6}$ part leſs than the medium of ſeven years, or 1,644,104$\frac{1}{2}$ buſhels. This ſhewed that the ratio of malt duty on Scotland was already too high, and ought not to have been increaſed.

3. The quantity of malt made from midſummer 1803 to Chriſtmas following, inſtead of being nearly one half, or at any rate about two fifths, was only 341,078 buſhels. This is not $\frac{1}{5}$ part of the yearly average.

4. The whole malt-tax levied in Scotland from midſummer 1802 to midſummer 1803, amounted to 137,868l. 17s. 3d.—But

| | | | |
|---|---|---|---|
| The malt-duty, from midſummer to Chriſtmas 1803, only to | L. 92,422 | 14 | 4 |
| And from this is to be deducted the duty on ſtock in hand | 34,808 | 7 | 0 |
| So that the whole duty on malt made laſt half year is only | 57,614 | 7 | 4 |
| At this rate, the whole malt-tax for a year is | 115,228 | 14 | 8 |
| This is leſs than the laſt years, or 137,868l. 17s. 3d., by | L. 22,640 | 2 | 11 |

I acknowledge that the malt made in the ſummer half year is not above two fifths of the malt made in the whole year; but it is evident, that the high ratio of the malt-tax on the whole of Scotland, joined to the late great addition to that tax, has defeated the object of raiſing a greater revenue: And I firmly believe, that a tax of 2s. 10$\frac{1}{2}$d. per buſhel on malt made from Scotch barley, and of 2s. 2d. on all malt made of bigg, while the duty on malt made in England is 4s. 4d., would produce more clear revenue to Government than a higher ratio of duty. Direct taxes can be levied by compulſion; but indirect taxes, or taxes on conſumption, can be carried only to a certain length; and on articles of inferior value, compared to raw materials of a better quality, too high a ratio on the inferior article muſt always hurt the Revenue.

BRANCH

# BRANCH II.

## Review of Agricultural Publications.

*Eſſays Literary, Political and Economical, in Two Volumes, by* John Gardiner, M. D. *Fellow of the Royal College of Phyſicians, and of the Royal Society, Edinburgh, &c.* Conſtable & Co. Edinburgh, and T. N. Longman & O. Rees, London. 1803.

Disquisitions, like thoſe now before us, which involve the happineſs and welfare of mankind in an important degree, are generally received in a favourable manner. So numerous, however, have publications of this kind been of late years, that one of two things may reaſonably be expected to follow; either that the people will be ſufficiently enabled to form correct notions upon every point connected with rural and political economy, or they will be ſurfeited with ſuch a laviſhment of advice, eſpecially as it is often beſtowed by thoſe who would not have been the worſe of inſtruction themſelves. Earls and Lords, phyſicians and ſurgeons, have lately ſtepped forward and proffered advice for promoting the internal improvement of the country; in ſhort, all ranks, except the lawyers, have lent their aid to forward ſuch a meritorious and important object. We beg pardon, even an Honourable Judge has condeſcended to throw in his mite, thereby ſhowing the ſenſe he entertained of the value of agriculture to the ſtate.

In making theſe preliminary remarks, we by no means apply any of them to the learned author of theſe volumes; on the contrary, we are in duty bound to declare, that much gratification has been experienced by us in examining his ſentiments on a variety of topics, none of which are undeſerving of notice. If he has not added largely to our original ſtock of information, he has at leaſt conveyed a good deal of pleaſure, by illuſtrating ſome important ſubjects with conciſeneſs and perſpicuity. Upon ſome of them, he perhaps has formed erroneous opinions; but even here criticiſm is in a great meaſure diſarmed by the fairneſs and candour which he conſtantly exhibits. Three fourths of the eſſays being foreign to the deſign of our Magazine, we ſhall confine this review to the ſections which more particularly relate to agricultural concerns.

Theſe ſections are, the 3d, 4th, 5th, 6th, 7th, 8th, 9th, and 10th, of the firſt volume. In examining them, we ſhall ſtate our ſentiments with freedom; and, avoiding every faſtidious remark, will with greater pleaſure beſtow approbation where we think it merited, than convey cenſure, even where opinions appear to be loofely taken up. Some people ſeem to think that a review ſhould contain all the errors of the author, and none of his truths; but our conduct ſhall always be guided by more liberal principles.

The third section is on the progressive improvement of agriculture, and means of its increase to answer the rising demands of the public. At the outset, Dr Gardiner falls into an error, at least his opinion, if acted upon, would effectually retard improvement. He asserts, in substance, that it is the duty of Parliament to keep the prices of provisions low, in order that the wages of labour may be regulated in a similar manner. Now, it occurs to us, and we have long practically experienced the truth of it, that the value of labour is seldom if ever ascertained by the price of provisions, but that the market value of the article is, almost in every case, regulated by the demand for the particular sort of labour that is wanted. People who write upon the price of provisions, should reflect that the value of money is now totally altered, and that a shilling for a peck of meal is a very different thing to the farmer from what it was in former times. His rent is augmented; the value of the labour he employs is, in every case, doubled; and public burdens, formerly almost unknown to him, are now of considerable magnitude. Besides, such should consider that high and low prices are only comparative, and that eighteen pence for a peck of meal is in reality a lower price at this time to the consumer than a shilling was twenty years ago, his relative abilities to pay the price being duly attended to. Why should it be thought that low prices tend to promote national prosperity? If provisions are produced at an increased expence, the manufacturer of them is entitled to an increase of price, otherwise he would be ruined by the trade in which he is concerned. The subject will not bear an argument. Indeed, in a subsequent section, p. 448. Dr Gardiner admits, that 'it is a specious, but false argument, that the price of labour is, in most cases, proportioned to the price of provisions; for in some districts,' says he, 'the price of labour is scarcely sufficient for the maintenance of a family; whilst in some of the manufacturing towns it is too high, to be consistent with the prosperity of our trade.' After this admission, we presume it would be superfluous to say one word more upon the subject.

We are much of Dr Gardiner's opinion concerning the deficiency of British grain, and have more than once declared it to be expedient and necessary to increase the quantity of cultivated land. This, as he very justly observes (p. 412.), can only be accomplished by the division of commons and the culture of waste lands, which, in their present state, are undoubtedly very unproductive. Perhaps, with the condition of these lands, now styled common and waste, Dr Gardiner may in some measure be unacquainted. Many of them are naturally of good quality; and, like old maidens, are only sterile, because they have not been cultivated. We have seen commons in England carrying nothing but gorse and thistles, which were of superior natural value to most of our Scotish infield; and yet, from individual negligence, or, what is worse, from legislative ignorance, they remained in a state disgraceful to the nation, and comparatively of little value to the proprietors and occupiers. So long as separate bills are necessary,

neceſſary, the diviſion of commons will be an uphill taſk; but if a general bill was paſſed, and a modus enacted for tithes, then the proceſs of diviſion would go on with rapidity.

Whether the common and waſte lands are improveable to the extent ſuggeſted by Dr Gardiner, we are not altogether certain; becauſe evidence is wanting to aſcertain their reſpective qualities. We are rather diſpoſed to think that their value is greatly exaggerated by many people, becauſe allowance is ſeldom made for the produce expended in working and feeding them, which for ſeveral years, under the beſt management, would at leaſt conſume one half thereof. It is evident, however, after every neceſſary deduction was made, that if one million of acres of theſe lands were brought into perfect cultivation, the preſent deficiency of home produce would be made up, whilſt the remainder might be improved according to circumſtances, or to the future demand of the market, which of courſe muſt always be regulated by the proſperity of the country. As population was augmented or luxury increaſed, a freſh extenſion would be neceſſary; and that this would take place from motives of private intereſt, till the whole iſland was improved, need not be doubted, provided legal obſtructions were removed.

In the fourth ſection, the bad effects of entails in a mercantile country are noticed. We extract two paragraphs, which will ſhow Dr Gardiner's ſentiments on this important queſtion.

'Indeed, I have always thought, that entails were contrary to the ſpirit of our conſtitution, and to the genius of a mercantile nation, where as little obſtruction ought to be given to the transference of land, as to that of any other property. The prohibitions that are given by entails to the ſale of lands, are, in ſeveral ways, detrimental to commerce, and obſtruct the proſperity of the country. How often does it happen, that creditors, by the deed of entail, are defrauded of their juſt debts! Theſe ſometimes amount nearly to the value of the eſtate; and, in ſome caſes, I have known them exceed it. From this circumſtance alone, entails appear to be a privilege, granted by law to rich individuals, to perpetuate their family and name at the expence of the public. This favours more of the aſſumed power of the ancient ariſtocracy, than of our preſent free conſtitution, in which we boaſt, that all are on an equality in reſpect to the laws.

'Theſe ſtrong objections to the practice of locking up lands by entails, and thereby preventing them from being transferred with the ſame eaſe and ſecurity to the purchaſer, as every other ſpecies of property, have long made me ardently wiſh for a repeal of the act of 1685. This act, undoubtedly, has been rendered leſs exceptionable, by the 10th of George III. c. 51, for encouraging the improvement of lands in Scotland held under ſettlements of ſtrict entail. But as they are ſtill unalienable, the moſt material objections to this ſpecies of tenure continue to exiſt, to the diminution of the wealth and proſperity of the country. Even truſt-deeds, carried to their utmoſt extent, as they often are in England, have all the bad effects of entails. Perhaps, no truſt-deed, directing or limiting the ſucceſſion of heirs to a landed eſtate,

eſtate, ſhould be effectual beyond the life of the heirs in exiſtence at the time.' Vol. I. p. 432-433.

We perfectly concur with Dr Gardiner, that thirlage, as a perpetual ſervitude, ought to be aboliſhed, due regard being paid to the rights of thoſe concerned. The concluding paſſage of the ſection on this ſubject, ſhows that the author entertains a correct opinion concerning a juſt commutation for thirlage, and that his ſentiments are different from thoſe expreſſed by the Roſsſhire Juries, as mentioned in the Supplement to laſt volume, and Firſt Number of the preſent one. He ſays, 'It is not twenty or twenty-five years purchaſe *of the whole profits* ariſing from the employment of the mill that ought to be given, but only what might be fully eſtimated as an advantage which the proprietor of the dominant mill *has in the inſucken, above that of the outſucken multures.*'

Dr Gardiner is hoſtile to a bounty upon the exportation of grain; and we muſt acknowledge that our ſentiments are very much in uniſon with thoſe he expreſſes. But there is no occaſion to diſcuſs this point; for in the preſent ſtate of Britiſh huſbandry, when oppoſed to the national conſumpt, we have no grain to export, conſequently the queſtion concerning bounty may remain in abeyance. We think the Doctor's diſcernment has, however, been aſleep, when he aſſerts, that 'our farmers have nothing to fear from the freeſt importation;' becauſe we are ſatisfied that, unleſs protecting duties were interpoſed, the home cultivator would be conſtantly underſold in his own natural market. What does it ſignify that the author of the Corn Tracts, publiſhed in 1765, calculated that the average quantity of grain annually imported amounted only to 23,728 quarters, ſince we are fully aſſured that the tables are now altogether reverſed. From the account of grain imported into Scotland *only*, given in the Appendix, it appears that, during the twelve years, viz. from 1790 to 1801, a quantity not leſs than 240,000 quarters was, upon an average, imported annually. This, we preſume, overturns all the previous reaſoning, and renders an additional argument altogether unneceſſary.

The flouriſhing ſtate of the Britiſh diſtillery, and its importance to the ſtate, are deſcribed in the ſeventh ſection; but, notwithſtanding the demand thereby occaſioned upon the farmer for barley, it muſt excite ſurpriſe, that this grain has been the moſt unvendible of all for ſeveral years paſt. We are not clear whether the quantity of barley malted is greater, or even as much as it was a hundred years ago; though rather inclined to think it is leſs, as may be aſcertained by a reference to the amount of the original malt duty. We have no objection that ardent ſpirits ſhould be taxed as high as Government pleaſes; but certainly conſider it as impolitic to ſubject malt to ſuch a tax as is now preſently impoſed. Ale may be reckoned as one of the neceſſaries of life; therefore the Britiſh brewery deſerves every manner of encouragement, ſo as the public may be provided with a ſafe and comfortable beverage.

Upon the tithe queſtion, Dr Gardiner entertains ſentiments which ſome people will regard as heterodox; though we muſt confeſs that they

they are nearly allied to thoſe we have always maintained ſince the merits of the queſtion were inveſtigated by us. He is friendly to a *modus*, or compenſation in lieu of tithe, and ſupports his opinion by ſeveral very judicious arguments. It gives us pleaſure to obſerve, that the plan for commuting or changing tithe for a proportion of rent, given in our Thirteenth Number, meets with his unqualified approbation. The Doctor's ſentiments on the general queſtion will however be more correctly comprehended from the following extract.

'Notwithſtanding what I have ſaid, in the preceding pages, on the diviſion and improvement of the commons and waſte lands of this country, certain difficulties, which obſtruct the progreſs of this deſireable end, ſtill remain to be conſidered. Among theſe are the church tithe, and poor's rates, in England; which, in many inſtances, affect the proprietors and farmers to ſuch a degree, as to baniſh almoſt all inclination to conſiderable improvements, from a diſlike to ſhare their profits with thoſe who bear no part of the expence. The tithe is frequently a very unequal tax upon the rent, and is always a great diſcouragement, both to improvements by the landlord, and cultivation by the farmer. It is a real land-tax, making part of the revenue of the clergy; is a heavy burthen on the proprietors of land; but is felt more ſeverely by the tenants; and is higher than even the land-tax formerly paid in to the treaſury for the exigencies of the State. The proprietor cannot venture to make the moſt important, which are commonly the moſt expenſive improvements, nor the tenant to raiſe the moſt valuable, which are likewiſe, in general, the moſt expenſive crops, when the Church, which lays out no part of the expence, is to ſhare ſo largely in the produce.

'So heavy a tax on the fruits of the earth, muſt neceſſarily have ſome effect in leſſening their production, in heightening the price of proviſions, and in reſtraining the population of the country, which will always correſpond with the quantity of food produced. How to obviate theſe inconveniences, ariſing from ſo burthenſome a tax on produce, and which operate, with ſo deciſive an effect, in obſtructing all expenſive and important improvements of farms, is a queſtion of moſt difficult ſolution. This difficulty ariſes, not ſo much from any impoſſibility of forming a plan of accommodation between the proprietors of land, the clergy, and the lay impropriators *, by which the effects of the tithe, complained of, might be taken away, but in ſo adjuſting the ſcheme to their ſeveral intereſts, as to give mutual ſatisfaction.

'Where there is no modus eſtabliſhed, it is an oppoſition of intereſt between the clergyman and the farmer, which occaſions ſo many altercations, and ſometimes lawſuits, on account of the tithe in kind, or its valuation in money. Were theſe perſons intent on ſtrict juſtice to each other, no diſpute could take place; but the clergyman, perhaps from

* The tithe of theſe laſt are ſuppoſed to extend to nearly a fourth part of the lands of England.

from miſinformation of the value of the crop, may ſometimes have the appearance of inſiſting for more than is right; while the farmer, from a diſlike to all kind of taxation, is tempted to withhold from the clergyman what is his due by law *. Such diſſenſions are followed by the worſt conſequences to the farmer and his family; for they cannot receive, with a juſt ſenſe of their propriety, the principles of piety and morality, how forcibly ſoever they may be delivered, by a parſon whom they neither reverence nor eſteem. This is an additional reaſon for a modus, of more importance to the happineſs of the people, than even the farther improvements of our lands, ſo warmly recommended in almoſt every part of this treatiſe. What a happineſs, therefore, would it be to the proprietors of land, to the farmers, and to the country in general, could ſome equitable, and leſs exceptionable method, than the preſent mode of levying the tithe, be adopted!' Vol. I. p. 483-487.

To provide for the deſtitute poor, has been an important object with every well-regulated government; but few have fallen upon the happy medium of enacting laws which adminiſtered ſalutary relief, without ſapping the foundations of induſtry and morality. Perhaps the object is nearer attained to in Scotland than in any country whatever; whereas in our ſiſter country, the burden of ſupporting the poor is on all hands acknowledged to be an intolerable grievance. The ſyſtem adopted there is radically bad; though it would be a herculean taſk to reform it altogether. A gradual modification of the evil is however very practicable; and the firſt ſtep of amendment is, to place the management of the funds of each pariſh in the hands of thoſe from whom they are levied.

Dr Gardiner's ſentiments may be gathered from the two following paragraphs, p. 522. *et ſeq.*

'The poor's rates in England, from the end of the ſixteenth century, have been gradually increaſing with the wealth and population of that country, till they have become at laſt, in many pariſhes, a heavy burthen

* Mr Arthur Young, who deſerves well of the public, for his laborious and expenſive tours through France and Italy, for the improvement of agriculture, obſerves, 'That in regard to the oppreſſions of the clergy, as to tithes, I muſt do that body a juſtice, to which a claim cannot be laid in England. Though the Eccleſiaſtical tenth was levied in France more ſeverely than uſual in Italy, yet it was never exacted with ſuch horrid greedineſs, as is at preſent the diſgrace of England. When taken in kind, no ſuch thing was known in any part of France, where I made inquiries, as a tenth; it was always a twelfth, or a thirteenth, or even a twentieth of the produce; and in no part of the kingdom did a new article of culture pay any thing. Thus, turnips, cabbages, clover, chicoree, potatoes, &c. &c. paid nothing. Olives, in ſome places, paid; in more, they did not. Cows, nothing. Lambs, from the 12th to the 21ſt. Wool, nothing. Such mildneſs, in the levy of this odious tax, is abſolutely unknown in England.' *Vol. I. p. 537. Lond.* 1792.——This accurate obſerver, in another part of his tour, previous to the French Revolution, ſays, 'All I converſed with in Italy, on the ſubject of tithes, expreſſed amazement at the tithe we are ſubject to, and ſcarcely believed that there was a people left in Europe, who paid ſo much; obſerving, that nothing like it was to be found, even in Spain itſelf.' *Vol. II. p. 273. of the Tour.*

burthen on the induſtrious; of which they loudly and juſtly complain. By the 39th and 43d of Elizabeth (the baſis of many ſucceeding acts relative to a proviſion for the poor), the churchwardens of each pariſh, with the concurrence of a Juſtice of Peace, acquired a diſcretionary power of impoſing and levying a tax on the inhabitants, according to the number and indigence of their poor. At the time when theſe acts paſſed, the diſcretionary power mentioned was probably neceſſary; and, according to the law as it now exiſts, and the preſent plan of levying the poor's rates, it is perhaps ſtill unavoidable. But it ſeems to me unreaſonable, even dangerous to the community, that a tax ſhould be laid on, at the arbitrary will of any two or three churchwardens or overſeers. The aſſeſſment ought, by act of Parliament, to be limited to a moderate rate in the pound, whatever may be the neceſſities of the poor. And when this ſhall be found inſufficient, the deficiency ought to be made up by a voluntary contribution from the opulent inhabitants. It is by a plan of this kind alone, that the moſt induſtrious part of the community can be relieved from the preſent oppreſſive burthen of the poor's rates; and I am confident, from the inſtinctive deſire in man to relieve the diſtreſſed, it will fully anſwer every purpoſe intended. This will obviate, in a great degree, that exceſs of charity, ſo hurtful to ſociety, and even ſo baneful to the indolent and ſlothful among the lower ranks, who ſo often throw themſelves unneceſſarily, from a diſlike to labour, on the charity of the public. For it is well known, that the poor's rates of many pariſhes in England have gradually augmented to double of what they were forty years ago; and from this too great liberality, the number of poor has proportionably increaſed; of which it is unneceſſary to cite particular inſtances.

'It has been often remarked, that many of the mechanics, porters, and other hard-working men in England, who have worn themſelves out by labour and intemperance, pay no regard to futurity, and neglect their offſpring, becauſe of the comfortable retreat on which they can rely, when they ſhall come to throw themſelves and their children on the charity of the pariſh. It is the too liberal proviſion made for the poor in England, the facility with which it is obtained, and the arbitrary manner in which the ſubject is taxed for their maintenance, that are the chief cauſes of the exorbitancy of the poor's rates, and the increaſing number of beggars. If the diſſipated journeymen of manufacturers, and other men of labour in great towns, who are accuſtomed to receive large wages, but ſpend them, to the laſt ſhilling, in waſte, are in the ſmalleſt degree diſabled, or even weary of work, they affect inability for labour, and are put on the poor's roll. This I underſtand they accompliſh, by an application to a Juſtice of Peace, from whom they procure an order on the churchwardens, in conſequence of which they receive nearly as comfortable a proviſion in a work-houſe, or by a weekly penſion, as men in the country of Scotland can earn by hard labour. To ſupply the indigent with food and raiment, provided you thereby do not offer a premium to indolence, prodigality,

prodigality, and vice, is ſalutary. To correct the lazy and the ſpend-thrift, to ſhut them up in houſes of confinement, till they have acquired habits of induſtry, is juſt and prudent; but in ſuch eſtabliſhments, ſo feed, to clothe, and to lodge them better than the ſober and diligent are clothed, fed, and lodged, is not agreeable to any principle of equity, and is inconſiſtent with ſound policy. On account, therefore, of the bad effects to the public, of an exceſs of benevolence, it ought to be a general rule, as formerly ſuggeſted, that every out-penſion to a pauper, or his maintenance in a work-houſe, ought to be ſomething below what the meaneſt workman can earn by his labour.' Vol. I. p. 522-526.

We agree with Dr Gardiner, that it is impracticable to prevent common begging; therefore think thoſe who are permitted to beg ſhould be under ſome ſuch regulations as he recommends. The account which he gives of the Royal Society of Mendicants (Blue-gowns) in Scotland, is curious and intereſting.

The ſection concerning the utility of foundling hoſpitals, contains many uſeful remarks; but being rather unconnected with rural matters, we ſhall reſtrict ourſelves to a ſingle obſervation upon it. Foundling hoſpitals, in one point of view, are beneficial to ſociety, by affording a receptacle wherein deſtitute infants may be reared up and trained to uſeful purpoſes; but, at the ſame time, as they alſo afford encouragement to immorality, and are ſeldom managed in a way that proves conducive to the purpoſes for which they are eſtabliſhed, we are not ſure but that the benefits thereby gained are much more than counterbalanced by the accompanying evils.

The laſt ſection is on the population of Britain at different periods. Dr Gardiner thinks that, at the invaſion of Julius Cæſar, the number of inhabitants did not exceed 850,000 of all ages; which number augmented during the government of the Romans to nearly three millions. At the death of Alfred in 900, he eſtimates that population, from various cauſes, had declined one third; and that even at the Conqueſt the number was not much augmented. During the reign of the Tudors, when leſs foreign war and fewer internal diſſenſions prevailed than in former periods, and when much attention was paid to agriculture and manufactures, he computes the population to have more than doubled. From the return of the Biſhops in 1676, it was then reckoned at ſix millions in England. The authentic returns lately made under the authority of the Legiſlature, however, prove, in the moſt ſatisfactory manner, that the number of inhabitants in Britain had rapidly increaſed during the eighteenth century. Indeed any perſon, who merely looked an inch before his noſe, might have been ſatisfied of the truth of this circumſtance without an actual enumeration. Agriculture was executed in a much more perfect ſtyle than formerly; manufactures had increaſed in an aſtoniſhing degree; canals, roads, and other internal improvements were making in every quarter; and how could theſe things have happened, unleſs population had increaſed? It was impoſſible; and ſuch a train of argument we always purſued before the

the fact was preciſely aſcertained, becauſe no other could then be reſorted to. It is unneceſſary to inveſtigate, here, which was cauſe, which was effect; whether the ſuperior attention diſplayed about internal improvement, and the increaſe of trade and manufactures, produced an augmentation of population, or whether the augmentation occaſioned internal improvement and increaſed trade. The fact is, they generally go hand in hand. Population will never be wanting in a proſperous ſtate. It may prevail under adverſe circumſtances, but cannot be wanting under a well-regulated government, where food and employment are abundantly provided. Were every obſtacle to internal improvement removed, we have no doubt but that the Britiſh iſles are capable of ſupporting double the number of inhabitants which are preſently collected within their bounds; nay more, we are convinced that an increaſe will regularly go forward, though with ſlower ſteps, in ſpite of every obſtacle, ſo long as the trade and manufactures of the country continue to flouriſh. N.

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*Letter addreſſed to the Commiſſioners of Supply for the County of Haddington. By* Robert Hunter *of Thurſton, Eſq. Edinburgh, printed by* C. Stewart. 1804.

This pamphlet contains a conciſe, and, ſo far as we know, a correct account of the ſquabbles which lately happened among the Commiſſioners for executing the Property-act in the county of Haddington. Wiſhing to avoid every thing of a perſonal nature, we muſt refer our readers to the pamphlet itſelf, which cannot fail to afford much amuſement. While the main part of this curious publication is thus paſſed over, we are in duty bound to notice the cauſes from which thoſe diſſenſions ſeem to have originated.

It appears that the Commiſſioners of the county of Haddington, at an early period, entertained different views reſpecting the extent of the Property-act, and that ſome of them wiſhed to exerciſe their powers in a more lenient way than met with the approbation of the majority. That the act itſelf was read by them in different ways will not excite ſurpriſe, ſeeing that the clauſes relative to the tenants' duty are in direct oppoſition to the principle of the act as expreſſed in the preamble. So far as we can make out, the minority were diſpoſed to execute the act according to its ſpirit, in other words, to aſſeſs the occupiers of land upon the ſame principles as they aſſeſſed proprietors and others; whereas the majority were reſolved to walk by the letter of the act, that is, to aſſeſs the tenantry in the full ſum of ſixpence upon every twenty ſhillings of rent, and to value each farm afreſh which had been occupied for more than ſeven years. The majority alſo refuſed to allow the deduction of one eighth from rent, though that deduction is clearly warranted; and, in ſhort, were determined to adminiſter the act with the utmoſt ſeverity. We believe this ſtatement will convey a pretty accurate picture of the views of both parties.

That

That the minority were in the right, we ſuppoſe few people will doubt, who have taken the trouble to beſtow ſuitable attention upon the act in all its bearings and branches. Indeed, the recent proceedings of the Commiſſioners in a great meaſure prove, that their original conduct was radically wrong. They have now allowed the deduction of one eighth, which was at firſt obſtinately refuſed. They have reduced a number of valuations upon the *ex parte* repreſentation of the occupiers; and latterly, in every inſtance, have acted with much moderation and wiſdom. The county of Haddington will now be generally aſſeſſed upon the ſame principles as are adopted in other diſtricts, though we are free to ſay that the tax will fall much heavier upon the tenantry all over the iſland, under every limitation, than it does upon other claſſes.

Having thus given our opinion concerning the line of conduct adopted by the two parties into which the Commiſſioners were divided, we come now to notice a paſſage of the pamphlet, which at once diſplays the principles which guided the majority.

In p. 4. Mr Hunter ſays—

'It muſt appear evident to you, that almoſt the whole property of this county conſiſts in land, and that, of courſe, the landlords' and tenants' taxes afford the great ſource from which the revenue to be raiſed by this tax muſt be drawn. There is little trade, and no manufactures of any conſequence, carried on in this county. If, then, the Commiſſioners ſhould overlook this moſt neceſſary, though moſt troubleſome part of their duty, 'the obtaining a fair and juſt valuation of all the farms that have been let and entered to previous to the laſt ſeven years,' they would be highly culpable, and deſerve ſevere reprehenſion, as well for their neglect of the public intereſt, as for allowing thoſe farmers who are in poſſeſſion of old and beneficial leaſes to be exempted from paying their fair and juſt proportion of this tax. Nothing can be more juſt than placing them upon the ſame footing with thoſe farmers who have entered to their leaſes within the laſt ſeven years, and are paying a rent adequate to the preſent value of their farms.'

That land was the great ſource from which the revenue, to be raiſed by the Property Act, was to be drawn in ſuch a county as Haddington, is inconteſtibly true. In the caſe of proprietors the duty was eaſily aſcertained; they were to pay one ſhilling out of every twenty received, ſo of courſe no miſtake could ariſe, or oppreſſion be committed upon them; becauſe, if rents were not received, proprietors were in no reſpect liable, unleſs for ſuch lands, &c. as remained in their natural poſſeſſion. In the caſe of occupiers, no ſuch diſtinctions or bounds are marked out; and the general rule, when applied to them, is vague, uncertain, and unequal. Even as it is, the rule is in direct oppoſition to the principle of the bill, which expreſsly declares, that the tax was to be a five *per cent.* one. This point, we are not however now to argue, though we would aſk Mr Hunter, the intelligent author of this letter, if he had granted a leaſe, the rent of which was ſpecified to be two hundred pounds *per annum*, payable at two terms, and that the writer had

had fallen into a miſtake by declaring that each term's rent was one hundred and fifty pounds. We aſk, Would ſuch a miſtake make the tenant liable to a greater rent than what was firſt expreſſed? Preciſely ſimilar is the queſtion reſpecting the property-tax with regard to the occupiers of land. The act firſt declares, that a duty of one ſhilling out of every twenty of gains and profits ſhall be paid by all perſons enjoying ſuch and ſuch incomes: but, when this rule is applied to the occupiers of land, the principle is deviated from; for, if rents only are to be aſſeſſed, a tenant is liable, whether gains or profits are enjoyed by him or not. If the act is referred to, it is equally fair to take the part that is for you, as the part that is againſt you; nay more, as the preamble of every bill is always underſtood to contain its object or principle, every after clauſe that is in oppoſition thereto may be ſafely conſidered as nugatory and inapplicable.

But leaving this general argument, and allowing that occupiers are bound to pay ſixpence per pound upon current rents, where leaſes have not been poſſeſſed for more than ſeven years, we would inquire, how, and in what manner, valuations are to be made upon thoſe who occupy land where the tenure is of a different deſcription. Suppoſe the occupier to poſſeſs upon a liferent, conſequently in a ſituation which diſables him in ſome degree from making improvements, is it fair, or is it juſt, to value land ſo occupied, upon the ſame terms as when ſet for nineteen or twenty-one years, and to levy not only ſixpence in the pound upon the whole as the tenant's tax, but alſo the proprietor's tax of one ſhilling per pound upon the increaſed rent which the ſaid land might afford if poſſeſſed under different circumſtances? We ſay, ſuch a procedure is nothing ſhort of groſs injuſtice, and cannot be defended by a ſingle enactment in the property-tax bill. Upon the mode and extent of the valuation, the bill is ſilent; it merely declares that a fair and juſt valuation ſhall be made, but does not ſay for one year or for any preciſe number of years. Our opinion has always been, that the phraſe means *a fair and juſt valuation for the year under which the tax is aſſeſſed*; or, at the very moſt, for the number of years which remain of the leaſe, all the circumſtances and burthens under which the poſſeſſion is held being conſidered.

Even under the ſuppoſition that farms, poſſeſſed for more than ſeven years, ought to be eſtimated at the greateſt worth they could pay under the moſt active management (for the conduct of the commiſſioners has been ſuch as to admit of the utmoſt latitude of ſuppoſition); ſtill, what ſhall be ſaid concerning the mode adopted by them in making valuations? Did they perſonally examine the lands ſo valued? No. Did they take an opinion from perſons of ſkill and capacity? No. Did they even call in the ſchoolmaſters of the reſpective pariſhes to their aid? No; though ſuch, from local information, were certainly better qualified to make correct valuations than the commiſſioners themſelves. What did they do then, to aſcertain the value of land poſſeſſed upon leaſes whereof ſeven years had run? Why, they even quietly ſat in their official chairs by a warm fireſide, and, without information or advice, rated every farm, not according to its quality or condition, but accord-

ing to the place it occupied in the map of the county, and to the number of acres therein contained.

We will not ſtop to inquire whether this was diſcharging the duties of their office in a manner conſiſtent with the oaths they had taken; nor whether the commiſſioners were gifted with intuitive knowledge to value land which they had never ſeen. We may however ſtate the conſequences of their official errors—A greater number of appeals than in any other diſtrict; an immenſe deal of trouble to individuals; and a general ſpirit of diſſatisfaction excited over the whole diſtrict, not ſo much againſt the tax as againſt thoſe appointed to carry it into effect.

Thus we have examined the proceedings of the Haddington commiſſioners in the execution of the Property Act, and have been induced to exceed the preciſe limits of the letter before us; becauſe, that county being a leading agricultural one, if the meaſures at firſt adopted there had been received *ſub ſilentio*, a burden, and one not intended by the legiſlature, might have been laid upon the tenantry of Scotland. We repeat, that the minority of the commiſſioners ſeem to have underſtood the act moſt correctly; and when we give this opinion, every perſon acquainted with the footing on which we have ſtood for many years with the honourable Baron who headed the minority, will be ſatisfied that neither partiality nor prejudice have influenced us in his favour upon this occaſion.

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Since the above went to preſs, ſome particulars have been communicated, which incline us to believe that the diſputes among the Commiſſioners have not been ſo correctly ſtated by Mr H. as we were at firſt led to imagine. '*Audi alteram partem.*' is an excellent adage; therefore, the ſubſtance of our recent information ſhall be given.

When the county met upon the 20th September 1803, to nominate Commiſſioners for executing the property act, the convener opened the meeting with a ſpeech, wherein he ſtated, That the act would require much diſcretion in the execution, particularly that branch of it which related to farmers poſſeſſing leaſes whereof more than ſeven years had expired: That if the ſtrict letter of the clauſe which applied to them was taken, without connecting it with the ſpirit and meaning of the act, a tax of 40 or even of 50 per cent. would be levied upon many people, ſo circumſtanced, inſtead of levying ſeven and one half per cent. upon the actual ſurplus profits truly acquired by the holders of ſuch leaſes: That though the words, '*the juſt and full value of theſe lands would let for if out of leaſe*,' if taken *per ſe*, might warrant a tax of the firſt deſcription, yet, as many honeſt men held old leaſes, and gathered little more than bread from them, while others under ſimilar circumſtances were making conſiderable profits, it would be altogether improper to put ſuch an interpretation upon the clauſe in queſtion, eſpecially as it could not be ſupported by the general ſpirit or principle of the act itſelf: That *profits* meant *a fact*, not an imagination; therefore, the queſtion to be inveſtigated and determined by the Commiſſioners was, what

profits

profits were truly and actually made, so as these and these only might be taxed, and not imaginary profits, which were never realized.

After this introductory speech, we understand that Baron Hepburn was first named as a Commissioner, but made some difficulty of accepting, on account of his official duties, which necessarily called him to be often absent. He was then requested to allow his name to remain, although he should only attend two or three meetings: so the difficulty was overcome. All this passed at the public table; and we see from the Appendix to Mr H.'s letter, that Baron H. actually did attend the first meetings. Whether the majority of the Commissioners thought from the beginning with Mr H., is a matter of little importance; but we understand that Baron H. considered them to be of his opinion during the days he attended. Upon this point, however, we will not pretend to decide, though it seems clear, that if a strong opposition had not appeared, the act would have been executed according to the way in which it was explained by Mr Hunter. In giving this opinion, we lay no blame either upon him, or those gentlemen who entered into his views, being satisfied that they had no other object but to discharge a public duty with uprightness and integrity. The act itself is so confused and intricate, that persons with equal good intentions differed about its meaning. Even the light recently thrown upon it has in a great measure arisen from the collision of argument, and did not beam all at once upon some people, who now appear to be best informed. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Cursory Observations on* LORD LAUDERDALE'*s Inquiry into the Nature and Origin of Public Wealth.*

SIR,

I HAVE always been disposed to consider political, economical, and statistical calculations as founded on vague, uncertain, and assumed data; consequently, as tending to produce false conclusions, and egregiously to mislead those who may found upon them, either in conducting the great affairs of the community, or the private concerns of individuals. This idea has at present been more particularly enforced upon my mind by Appendix No. XIV. to Lord Lauderdale's Inquiry into the Nature and Origin of Public Wealth; respecting a part of which Appendix I beg leave to offer some observations, to the Noble author and the public, through your highly useful and widely-diffused periodical work.

You will please observe, that I mean not to enter upon any discussion of the great topics so ably handled in the above mentioned publication, which I have read with great pleasure, and I hope with some improvement: That task I leave to more competent judges. All I intend to take notice of in this communication is, the total inaccuracy of the statements made by Mr James Donaldson respecting the produce and expences of farming in the Carse of Gowrie. From the great name and high abilities of the Earl of Lauderdale, inconsiderate readers might

be induced to suppose that these statements, calculations and results were stamped by his authority as authentic. It is perfectly evident, however, that the Noble author only makes use of them, generally, to shew the superior advantages, both to individuals and the public, of agriculture carried on by intelligent men of capital, upon a scale of some magnitude, as contrasted with the misery and unproductiveness of the wretched agricultural system in a large portion of France under the Metayers.

The Earl of Lauderdale will excuse a plain country man for two slight observations. By a typographical error, his Appendix No. XIV. is made to refer to p. 269. of the body of his work; whereas the reference ought to have been to p. 342. And in the translation of a French letter in the same Appendix, *joncs-marins* is rendered sea-rushes; whereas furze, gorse, or whins, is the real meaning. I am not quite sure that brushwood is a proper translation of *brandes*; which I believe means *copse*, or wood fit for making into charcoal.

Mr James Donaldson, as quoted by Lord Lauderdale (for I have not seen his own publication), estimates the Carse of Gowrie to contain 30,000 acres of arable land, and the total produce thereof at 132,817l. 13s. 8d. a year, upon an average of crops and prices. He also estimates the average rent of the Carse at thirty-five shillings an English acre yearly.

He gives a particular statement of the expences attending the cultivation of a farm of 272 acres during six years; by which it appears, on the average, to cost 2l. 8s. 4d. annually per acre for charges of every kind, independent of rent, taxes, interest of money for stock, or maintenance of the farmer and his family.

Combining all his data together, and supplying some very material omissions (for I contend that such calculations upon hypothesis never can be accurate), I have endeavoured to reduce the whole into an account-current, that we may form some judgement of the general result.

| *Carse of Gowrie Agriculture* | | | | *Dr.* | | |
|---|---|---|---|---|---|---|
| To rent of 30,000 acres, at 35s. per acre | | | L. | 52,500 | 0 | 0 |
| — Property Tax on the farmer at 6d. per pound Sterling | | | | 1,337 | 10 | 0 |
| — expence of management, at 48s. 4d. per acre | | | | 73,000 | 0 | 0 |
| — parochial and district taxes, not less than property tax | | | | 1,337 | 10 | 0 |
| — assessed taxes, at 10l. each farm, and these estimated at 150 farms | | | | 1,500 | 0 | 0 |
| — maintenance of 150 farmers' families, at 100l. each, including clothing and education | | | | 15,000 | 0 | 0 |
| — interest of stock on 150 farms, at 1500l. each, allowing 15 *per cent.* for interest, insurance, and profit—225,000l. capital in whole | | | | 33,750 | 0 | 0 |
| *Contra* | *Cr.* | | | | | |
| By total annual produce | L. | 132,817 | 13 | 8 | | |
| By balance, being actual yearly loss | | 45,607 | 6 | 4 | | |
| | L. | 178,425 | 0 | 0 | L. 178,425 | 0 0 |

Thus

Thus it diſtinctly appears, from the aſſumptions of Mr James Donaldſon, that the farmers of the Carſe of Gowrie, collectively, muſt incur an annual average loſs of 45,607l. 6s. 4d. Or, taking them individually, that each farmer of 200 acres of that fertile diſtrict, paying 450l. a year of rent, muſt ſuffer an average yearly loſs of about 304l. Hence, this ſyſtem, were it poſſible, muſt be infinitely worſe than that of the French Metayers; who, having nothing originally to loſe, can never become worſe by the worſt of years; whereas the Carſe farmers of reſpectable capital muſt, in a very few years of average produce, be reduced from competent affluence to total bankruptcy and beggarly poverty.

Nothing would be eaſier than to conſtruct a new ſet of tabular calculations for the Carſe of Gowrie, upon equally vague and hypothetical data, to prove that the farmers of that diſtrict gain as much money annually, or even five times more, if you pleaſe, as they evidently loſe upon the aſſumptions of Mr James Donaldſon. But that is neither my object nor inclination: I am perfectly ſatisfied the Carſe farmers poſſeſs too much good ſenſe, to employ their talents and capitals in ruinous ſpeculations, though I do not pretend to calculate what are their actual gains. Some eſtimate muſt be formed by every man who means to take a farm; but ſuch an eſtimate muſt be directed by local inveſtigation of numerous circumſtances. One obvious defect appears on the eſtimate by Mr James Donaldſon of the produce of the Carſe of Gowrie: Neither beef, mutton, veal, lamb, pork, wool, butter or cheeſe, enter into his average produce of one of the moſt fertile diſtricts in our iſland.

I have fulfilled my views, of proving, in this inſtance at leaſt, the fallacy of ſuch calculations. The failure of the gigantic Income Tax, which is now revived with *refreſhed* ſtrength under the name of Property Tax, and the produce of which fell nearly a half ſhort of its eſtimate by the great financier PITT, is an inſtance, on a grander ſcale, of the abſolute uncertainty of all ſuch ſpeculations. It is well for the farmers and proprietors in Gowrie, that their rents and profits are fixed on firmer foundations than the eſtimates of Mr James Donaldſon; and for our country, that its revenue and defence did not neceſſarily depend upon the accuracy with which the productiveneſs of the Income Tax was eſtimated by Mr Pitt.

DOMINE.

# BRANCH III.

## Agricultural Intelligence.

The ſpring quarter, ſo unpropitious to ſeed-work, was followed by a month of genial weather, ſeldom rivalled in this iſland; which enabled the wheats to tiller and flouriſh; puſhed on the paſtures and young clovers with great rapidity, where plants were not wanting; and vegetated all the ſpring-ſown grains in a much more complete way than could have been expected, conſidering the ſituation of the ground and the ſtate of the weather when they were depoſited. Even the months of June and July, on the whole, proved favourable to rural proſperity. The fulleſt opportunity was given for dreſſing the turnip fields and naked fallows; and though drought has operated with ſeverity in ſeveral diſtricts, and ſtunted the crops, yet, taking the quarter upon the great ſcale, it muſt be pronounced a favourable one to the huſbandman.

Markets for grain, as generally expected, have advanced conſiderably of late, though, as uſual, the market of the metropolis remained longeſt in an equable ſtate. Importations from abroad, chiefly of wheat and oats, have at the ſame time gone regularly forward; which ſubſtantiates, in the moſt ſatisfactory way, the doctrine uniformly maintained in this work reſpecting the dependence which Britain, under exiſting circumſtances, muſt have upon foreign countries for a ſupply of corn. The crop of 1803, ſtrictly ſpeaking, was by no means a ſhort one, or below a fair average; and yet the produce thereof has been found unable to ſupply our wants. What does this inculcate? It inculcates, in the ſtrongeſt manner, that an increaſed attention to home agriculture is neceſſary, that the people may be fed independent of foreign ſupply, which, at the beſt, muſt neceſſarily turn out a loſing trade. This increaſed attention is now ſhewn by the Legiſlature, in changing the rates at which foreign importations can be made duty free; which, undoubtedly, to a certain extent, will give ſupport to home agriculture. More, however, muſt be done, before ſubſtantial and permanent encouragement is enjoyed. The legal obſtacles which retard the cultivation of common and waſte lands muſt be removed; becauſe in them the moſt effectual reſource for ſupplying the exiſting deficiency is only to be obtained. If a ſyſtem was adopted which allowed the old arable land to be thrown into graſs, and permitted the paſtures to be opened, as often recommended in this publication, then full ſupplies might be procured upon reaſonable terms. The mode of living now practiſed in Britain calls for a more abundant ſupply of every article. Laying the increaſed population altogether aſide, we may fairly ſuppoſe that the increaſed conſumpt of wheat as bread food, and of oats for ſupporting horſes, requires, at leaſt, one fourth more cultivated land than was neceſſary a century ago. If we add to this the increaſed demand for butcher meat, which of courſe leſſens the breadth of cultivated

vated land, it will not give ſurpriſe when the change, which has been progreſſively going on in our corn trade, is diſcovered. If agriculture had not been executed upon more correct principles than formerly, it is plain that a great part of the people would either have been ſtarved at home, or forced to emigrate to other countries.

An enemy appeared on the turnip fields this ſeaſon, whoſe preſence has not been recogniſed for nineteen or twenty years. This was a black worm or caterpillar, about one inch in length, that ravaged the fields with ſuch uncommon rapidity, as for ſeveral days to render it a problematical point in many diſtricts, whether a ſingle turnip would remain undeſtroyed. If the progreſs of this inſect was rapid and unexpected, its departure was equally ſo; and though much damage has been ſuſtained, yet we believe that a good deal of the loſs proceeded from the delay thereby occaſioned in the cleaning proceſs, many people judging it unneceſſary to thin or hoe a crop, which, in their opinion, could not be ſaved from theſe hoſtile invaders.

A conſiderable declenſion in the value of lean ſtock, both cattle and ſheep, but chiefly of the latter, has taken place this year, though fat ſtill maintains a good price, or rather is more in uniſon with the price of lean ſtock than in the former year. Still, after all, the produce of graſs and eſculent roots is infinitely higher priced than that of corn fields. In former times, a pound of beef rarely ſold for more than the value of two pounds of bread; but now the former is triple the price of the latter, and lately the difference was conſiderably greater. If we take into account the increaſed value of labour, little of which falls either upon the breeding or the feeding farmer, and the public burdens affecting the corn farmer, (inſtance, the horſe-tax), it muſt be acknowledged that a greater incentive is held out to lay land into graſs, than to cultivate it with the plough. After all, it appears that the quantity of graſs land, at leaſt what is uſed in feeding, is unequal to the demand, otherwiſe the value of produce would diminiſh. Whenever there is an overplus, the diſeaſe will inſtantly work its own cure, mankind being remarkably ſharp-ſighted in the aſcertainment of ſuch matters.

We have already alluded to the encouragement beſtowed by the Legiſlature upon home agriculture, in raiſing the prices at which corn can be imported at a nominal duty from foreign countries; which, if our principles are correct, will raiſe the price of corn at home in a proportionable manner. In the firſt Branch of this Number, a copy of the Report made to the Houſe of Commons by the Committee appointed to inveſtigate the buſineſs, is given, together with the ſchedules, agreeable to which the bounty upon export, and the duties upon import, are to be regulated. We underſtand that ſome alterations have been made in theſe ſchedules, the preciſe extent of which we are not ſufficiently informed of to ſtate correctly at this time. If the bill has received the Royal aſſent, and is communicated to us before the concluding part of this Number goes to preſs, we ſhall preſent the ſubſtance of it to our readers in a poſtſcript; other-

wiſe it ſhall be fully given in the ſucceeding Number. At this time, we may only ſay that the bill is founded in juſtice, being calculated to prevent foreigners, who are not ſubjected to our burdens, from interfering in the home market of Britain, when prices are below the rates at which Britiſh huſbandmen can be reckoned able to cultivate grain. So far the bill will operate as a temporary remedy, but ſtill it cannot be conſidered as an effectual one; for as rent, labour and taxes increaſe, or, what is the ſame thing, as the value of money diminiſhes, ſo ought the importation rates to be raiſed in a proportionable manner. We have ſeen a ſtatement laid before the corn Committee, which demonſtrates that every Linlithgow boll of grain, diſpoſed of by the farmer at this time, actually coſts him ten ſhillings more than it did in 1790, upon the ſuppoſition that a given ſpot of ground, ſay an acre, yielded the like quantity at each period. If this be the caſe, and we are diſpoſed to believe that it is not wide of the truth, then it may be inferred that agriculturiſts are not placed, by the preſent bill, in ſuch a favourable ſituation as they occupied in 1790, when the laſt one was paſſed. A feeble oppoſition was made to the bill, but it met with little attention. The Glaſgow Chamber of Commerce early committed themſelves, by entering into reſolutions to oppoſe the bill, but they were followed up with very little vigour, and were ſeconded by only few manufacturing bodies. Indeed, the Chamber forgot that, when compared with wages earned by labourers and manufacturers at both periods, the price of proviſions would abſolutely be lower, even if grain reached the importation rates, than that at which they were furniſhed in 1790. The country, generally ſpeaking, ſeemed to be of this opinion; for no corn bill ever received leſs diſcuſſion, or excited leſs attention among the manufacturing and trading intereſts of Great Britain.

When on this ſubject, we cannot avoid noticing ſome parts of Mr Chalmers's late edition of the Political Eſtimate of Great Britain, becauſe we conceive them calculated to do much miſchief among people who are unable to inveſtigate ſuch ſubjects with preciſion. Mr Chalmers, we are aware, piques himſelf upon his accuracy in *matters of fact*; but this calls upon us to deal the more plainly with him. If he had only been a common writer, one who was in the habit of gathering facts at random, we might have paſſed him in ſilence; but his reputation being great, and his authority conſidered by moſt people as unqueſtionable, we are induced to beſtow a few minutes in conſidering what he ſays about the corn trade of Great Britain.

'As I have been aſked my opinion,' ſays Mr Chalmers, 'with regard to ſcarcity, the paſt and the future, I will ſubmit my judgement upon this intereſting ſubject. During the war and the dearth, I was ſilent; though I did not always approve of what was done or ſaid. Now that we have peace and plenty, I will deliver my ſentiments,' &c. &c. (p. 320.)

With regard to the corn laws and their operation, Mr Chalmers concurs with the opinion of Mr Howlett, which he quotes (p. 330.),

'That

'*That the various changes in our corn laws are ſo far from being the only, or even any conſiderable cauſe of the decreaſe of our exports of corn, that there is no neceſſity for ſuppoſing they have been any cauſe at all.*' He then proceeds to ſay (p. 331.), 'After a long conſideration of the corn accounts which were printed by order of Parliament in November 1800, and weighing collateral circumſtances, it appears to me, that the ſeaſons, either good or bad, have been the efficient cauſes of plenty or ſcarcity, from the epoch of the exportation bounty to the preſent times. After fully conſidering this intereſting ſubject, the ſeries of corn laws appeared to me like continued attempts to regulate the ſeaſons.' He then obſerves in regard to prices, 'There are two points which are beyond the power of Parliament: the Legiſlature cannot regulate the courſe of the ſeaſons; neither can the Legiſlature controul the ſubtle and ſilent depreciation of money, which ſeems to have the all powerful force of ſteam.' *

This is ſound doctrine. However (in p. 331.) Mr Chalmers advances the following *ſtrange poſition*. 'I will now ſpeak of the recent dearths, which proceeded from various cauſes. The principal cauſe was, undoubtedly, a long ſeries of unfavourable ſeaſons. We have, as I have already ſhewn, not only a greater number of people to feed; but a greater number of opulent and waſteful people to feed, owing to the favourable change in the circumſtances of a great many people. *In the mean time, the whole neceſſaries of life were ſold upon the principles of concert. From Cornwall to Caithneſs, there is an underſtanding among the ſellers, who never forget that the conſumers are wholly in their power. And, by means of this underſtanding, and of that concert, there is not a free market in Britain, where the balance of ſupply and demand can vibrate without the interruptions of avarice,*' &c. In page 333, after allowing of an enhancement of price from the war, in conſideration of the more liberal ſupply of the army and navy, and the conſequent additional demand, in proportion to the ſupply, from the army agents, he thus proceeds: 'But ſome other effects of war contribute to enhance the prices ſtill more. When the aſſeſſed taxes and the income tax were collected, the ſuppliers of the neceſſaries of life contrived to impoſe their proportion of thoſe taxes on the conſumers in the prices of the neceſſary articles,' &c.

Now, we would preſume to aſk Mr Chalmers what becomes of his accuracy and moderation, when he aſſerts general concluſions of the above nature, without the leaſt ſhadow of proof from fact, and upon no better authority than his own *ipſe dixit* and *private think*. As *his opinion* was however *in his opinion* to have ſuch unlimited credit with the public, we muſt give praiſe to his diſcretion, in abſtaining from giving it during the time of dearth, that he might not increaſe the public irritation. We might alſo inquire upon what principle he judges of the effect of ſeaſons, as that upon which prices depend more than upon corn laws. For if we admit of concert and combination among the ſellers as a principle regulating prices, it remains to be aſcertained how

* The author adopts implicitly Sir George Shuckburgh Evelyn's ratio of depreciation, though we think the truth of its data very queſtionable.

how far this influence extends. Does this underſtanding and concert only prevail among the ſellers in ſcarce years? If ſo, before Sir George Shuckburgh's tables can ſhew the extent of depreciation of money, an allowance of deduction, for the effect of this underſtanding in concert, muſt be made in every dear year, before it can afford the proper datum of price. It is ſtrange that this underſtanding and concert ſhould only affect prices in times of ſcarcity, when it expoſes the ſellers to obloquy and outrage, and ſhould not more certainly take place in ſeaſons of plenty, when it might be carried to great length without any danger. Or is it, that dearth is never owing to ſcarcity, but always to this underſtanding and concert, and of courſe that cheapneſs does not indicate plenty, but merely a want of underſtanding and concert among the ſellers?

We wiſhed to have diſcuſſed, with more minuteneſs, the ſtrange opinion entertained by Mr Chalmers concerning the underſtanding which prevails among the dealers in grain; but the bounds of this article reſtricts us from doing more (at leaſt at this time) than merely noticing it. It is only of late that we heard of the publication, otherwiſe we would have examined him more ſtrictly in another place. In a word, we may only add, that no man, converſant with the corn trade of Britain, can for a moment ſeriouſly believe it practicable to regulate prices by any previous concert or underſtanding among the ſellers. Nay more, it is impracticable to regulate the prices of a petty market; for the ſellers can never aſcertain beforehand the number of purchaſers, or the extent of their demand; therefore all previous concert may in a moment be overturned.

Our readers will obſerve, in the firſt Branch, ſome excerpts from the report of the Malt-tax Committee, wherein the evidence given by our reſpectable friend and correſpondent Dr Skene Keith makes a conſpicuous figure. After all that has been done, no relief can be obtained for Scotland, at leaſt till another Seſſion, Mr PITT having moved that the conſideration of the buſineſs ſhould be put off to that time, in order, as he ſaid, that ſatisfactory experiments might be made to aſcertain the relative qualities of Engliſh and Scotch Barley. We were never very ſanguine in expecting relief, though we have repeatedly preſſed the neceſſity of it, unleſs it was meant to ruin the culture of barley in Scotland altogether. Our landed gentlemen have, however, remained in a ſtate of apathy during the diſcuſſion; not a ſingle public body having ſtirred, except the Highland Society of Scotland, who certainly deſerve much praiſe on this occaſion. We repeat what was formerly ſtated, that Scotch barley cannot compete in the market with Engliſh barley at more than half duty; nay more, that its ſale, in bad ſeaſons, will always be injured even when half duty is paid. The original value of the raw article is comparatively trifling to that of the perfect article; therefore no juſt concluſions can be drawn from the prices of each country, though it appears that the Committee had beſtowed much attention in inveſtigating and aſcertaining them.

The property-tax remains, ſo far as we know, uncollected in every county; and the indeciſion of the commiſſioners and others appointed

to

to execute the act which impoſed it, ſhews, in the cleareſt manner, that our original ideas concerning its intricacy and confuſion were not without foundation. In making aſſeſſments upon farmers, who have occupied for more than ſeven years, no rule or principle is laid down, except that the aſſeſſment muſt be levied according to rack-rent. But what is rack-rent? Why, juſt ſo much as the farm will give, when no fine or graſſum is paid. But then, whether this rent is the ſum at which the farm would ſet, for one year, for a leaſe of twenty years, or for one of a hundred years duration, the act does not ſay; though, no doubt, the value of any farm is much regulated by the length of tenure under which it is poſſeſſed, and by the extent of abilities enjoyed by the poſſeſſor. Here is a ſource of diſpute and of unequal aſſeſſment which ought to be removed, otherwiſe valuations can never be correctly made. We underſtand that a plan was laid before his Majeſty's miniſters which, in a great meaſure, would have placed the farmer in the like ſituation with other claſſes; that is, his profits would have been aſſeſſed by ſurveyors of ſkill and capacity, who were actual farmers, and reſided in his neighbourhood. It does not however appear that any ſteps have been taken to operate upon this plan; though, unleſs ſomething of this nature is reſorted to, the occupiers of land will, leſs or more, continue to be taxed upon a higher ratio than their fellow ſubjects, who enjoy equal gains and profits. If the commiſſioners appointed to execute the act are men of diſcernment, relief, to a certain extent, may be gained; but ſo long as rent is held, in any ſhape, to be the criterion of aſſeſſment, the grievance complained of cannot be altogether removed.

A buſineſs of much importance to all maſters, and involving the intereſt of farmers in particular, was lately before the Lower Houſe of Parliament, on which account alone we notice it here. We allude to the proceedings in the caſe of Mr Morriſon, a farmer in Banffſhire, and Garrow his ſervant. The queſtion ſhall be viewed in the abſtract, becauſe it admits of a general application. A very few remarks ſhall only be offered.

When a maſter hires a ſervant, the time of the latter, to an extent either aſcertained by poſitive paction, or regulated by common practice, is tranſferred upon certain conſiderations ſtipulated betwixt the parties. The ſervant, if in health, cannot withhold his ſervice without breaking his part of the agreement; nor can he employ his time in other occupations, unleſs he receives the ſanction of his maſter. If the ſervant craves leave of abſence for an hour, a day, or a week, the maſter may grant it or not, as he chooſes; but, in ſuch caſes, the ſervant cannot be the judge, ſeeing it is the property of another that he is diſpoſing of. If the ſervant could diſpoſe of his time according to pleaſure, with the like propriety might the maſter contend for liberty to ſpend the wages promiſed to the ſervant, or withhold any part thereof as fancy ſuggeſted. We aſſuredly think that farm ſervants are entitled to every encouragement and mark of favour, and in our practice have conſtantly ſtudied their comfort and welfare; but, were ſervants made judges in theſe matters, it is clear that nothing ſhort of anarchy and

inſubordination

inſubordination might be expected to follow. Applying theſe remarks to the caſe of Mr Morriſon, it appears that his ſervant Garrow took an unwarrantable liberty, when he deſerted ſervice for a day, without obtaining permiſſion. We give no opinion concerning the expediency or prudence of Mr Morriſon's conduct; but we are decidedly of opinion, that if a ſervant could go to an inſpection contrary to the will of his maſter, he might go to other places, and engage in ſcenes of a very different nature, whether his maſter gave him permiſſion or not.—— *July* 30.

*N. B.* Since the above was ſent to preſs, the following account of the new Corn Bill has been received from our correſpondent in London.

According to the Corn Bill (which now only waits the Royal aſſent), the exportation and importation of grain, from and into Great Britain, are to be regulated by the aggregate average prices of the whole of the twelve maritime diſtricts in England and Wales, and of the whole of the four maritime diſtricts in Scotland, from the quarterly and weekly returns; and the exportation and importation allowed at the following duties and bounties. The bill commences on the 15th November.

## EXPORTATION ALLOWED.

Wheat - - - - if at, or under 48s. p. quarter, Bounty 5s. p. quarter.
Rye - - - - - if at, or under 32s. p. quarter, Bounty 3s. p. quarter.
Barley - - - - if at, or under 28s. p. quarter, Bounty 2s. 6d. p. quarter.
Oats - - - - - if at, or under 16s. p. quarter, Bounty 2s. p. quarter.
Peas and Beans if at, or under 35s. p. qr. exportable, but without bounty.

## EXPORTATION PROHIBITED.

On Wheat - - - - - - - - if above 54s.
Rye, Peas and Beans - - - - - 35s.
Barley, or Malt - - - - - - 31s.
Oats - - - - - - - - - - - - 19s.

## IMPORTATION ALLOWED.

Wheat—If under 63s. p. qr. Duty 24s. 3d.—If at, or above 63s. but under 66s. Duty 2s. 6d.—If at, or above 66s. Duty 6d.

Rye, Peas and Beans—If under 42s. p. qr. Duty 22s.—If at, or above 42s. but under 44s. Duty 1s. 6d.—If at, or above 44s. Duty 3d.

Barley—If under 31s. 6d. p. qr. Duty 22s.—If at, or above 31s. 6d. but under 33s. Duty 1s. 3d.—If at, or above 33s. Duty 3d.

Oats—If under 21s. p. qr. Duty 6s. 7d.—If at, or above 21s. but under 22s. Duty 1s.—If at, or above 22s. Duty 2d.

## *EXTRACTS FROM PRIVATE CORRESPONDENCE.*

## SCOTLAND.

*Letter from a Gentleman in Glaſgow, June 15th.*

'You will remember that I formerly mentioned a piece of ground of two acres adjoining to this city, which I was endeavouring to improve.

In

In November 1802 I planted it with the beſt ſorts of gooſeberry buſhes from Lancaſhire. They were planted in rows with ſeven feet of intervals, and five feet betwixt each buſh, and are thriving tolerably well, though no fruit worth mentioning has as yet been got.

Laſt ſeaſon I had potatoes in the intervals, ſay about 30 inches from the buſhes, which in many parts failed altogether. The cauſe of failure was from the ground being infeſted with a ſmall yellow worm, about one inch long, and about the thickneſs of a ſtrong pack-thread. In the month of February this year, I ſpread quicklime, and alſo lime rubbiſh upon the parts moſt infeſted; but, to my aſtoniſhment, the worms ſeem to be rather increaſed than diminiſhed thereby, and the potatoes planted this year have in conſequence failed. As an experiment, I ſowed part of the field with onions and leeks, about two thirds of which failed to appear; and where the inſects are moſt prevalent, even the ſeeds that vegetated are ſince completely deſtroyed. As a further experiment, I mean to plant ſome hundreds of cabbages and ſavoys, and alſo to ſow different kinds of turnips. Pray give me your opinion on theſe matters, or inſert the ſubſtance of this letter in your Magazine, ſo as I may be favoured with the ſentiments of your correſpondents.'

'*P. S.* Since writing the above, I have viſited the field, when my gardener took up the encloſed ſample of theſe devils. The ſoil is abſolutely perforated by them.'

*Letter from a Gentleman in the neighbourhood of Perth, July 16.*

'The crops in this quarter promiſe to be good, notwithſtanding the ſharp froſts which we have lately had in the evenings and mornings, particularly on Wedneſday laſt, which leads me to ſuſpect that the tender blooms of the wheat may be injured, though, as yet, no evidence thereof is diſcovered. Yeſterday we enjoyed a fine mild ſhower, which, with the warmneſs of the weather, it is to be hoped will produce beneficial effects. Hay harveſt is in great forwardneſs, and will ſoon be concluded if the weather continue favourable. The produce this ſeaſon is, without doubt, below that of an average crop. Turnips every where in this neighbourhood look extremely well. Wheat on the fallows is, in general, a good crop; but oats and barley threaten to be of little bulk. In our markets, cattle in good condition ſtill command fair prices, though ſomewhat under thoſe of laſt year.

*Dumfrieſſhire Quarterly Report.*

A favourable change of weather commenced in the end of April, when vegetation began with rapidity, ſince which it has received little check. Cold bottomed lands, however, were ſo extremely chilled by the ſpring rains, that the crops upon them were very long of recovering; and indeed, at this day, there is a greater difference between the crops of them and dry ſoils, than has at any time been obſerved after ſo long a tract of warm good weather. Wheat is generally luxuriant upon good ſoils, and has the probable chance of being well filled from moderate weather while in the flower, of which there never was a greater ſhow upon the ear. The quantity of wheat in this county is greater than ordinary,

dinary, owing to the ſtagnation of the ſale of barley. Oats, though ſtrong and forward on dry ſoils, are backward on cold-bottomed lands, and do not on the whole promiſe more than an ordinary crop. There has been ſome demand of late for wheat and oats for the Liverpool market. Wheat per Wincheſter buſhel ſells at 6s.; Potato Oats at 3s.; Common Oats at 2s. 6d.; beſt qualities. Theſe are conſidered as low prices; and though ſome years ago this might not be the caſe, they are now certainly much under what grain can be afforded at by the farmer who pays additional rent, and double wages to ſervants, labourers, and tradeſmen. The increaſe of the expence of the implements of farming would of itſelf require a conſiderable addition to the price of produce.

Turnips were generally late of ſowing, but are come up well and healthy. Thoſe ſown early, however, have on ſome farms been affected by the ſmall black caterpillar, which deſtroys the leaf entirely; and one farmer, it is ſaid, has already ploughed down a field of ten acres from this cauſe. This worm, ſo far as I have obſerved, has appeared once only in my time of farming, about twenty years ago. It then deſtroyed many fields, and prevailed generally over the kingdom. It eats the leaves wholly, except the fibres. It is extremely tender. It ſeems likely that a light roller would deſtroy them, without injuring the crop otherwiſe when ſo young.

The demand for ſheep and cattle has been ſlow; ſo much ſo, that the Engliſh farmers and dealers have not come for them as uſual; and when carried up by the Scotch dealers, a fall of prices muſt enſue. Rough ſheep, of the ſhort or moorland kind, have kept better up to their former price than the long or Cheviot kind, which is the more unuſual, the price of wool having been on the riſe. Hogs have given from 10 to 13s. the ſhort kind; Dinmonts from 15 to 20s.; Long ſheep not more. Year-old ſtots in June about 5l. Yeld cows, Annandale or Galloway ſize, from 7 to 10l. Theſe are 20 per cent. under laſt year's prices; but are, in my opinion, not to be reckoned too low.—*July 20th.*

*Letter from Inverneſſſhire, July 23.*

'In the neighbourhood of Inverneſs, the crops in general preſent a good appearance, eſpecially upon the hill and moor lands, which are, on the whole, more weighty than thoſe on the ſea-coaſt. A few of the early turnips ſuffered from the fly; but it was ſo far lucky that we had an unequal braird, as the laſt come up ones ſupplied the deficiency occaſioned by the ravages of that inſect. Potatoes make a good appearance, though curled ones are to be ſeen in many fields. Improvements in agriculture are faſt advancing in this county; and a perſon who has been abſent for a few years, will hardly be able to recognize the fields he was formerly acquainted with, ſo great has been the change.

'The Caledonian Canal is carrying on with ſpirit, though none of it is yet dug out to its full depth. A great number of hands are employed, the moſt of them at piece-work, or at ſo much per ſolid yard; when employed by the day, not more than eightenpence of wages is given at preſent, though I am convinced that ultimately this great undertaking

dertaking muſt have a conſiderable effect in raiſing the value of labour here. Cattle have a dull ſale at preſent; and as to ſheep, matters are ſtill worſe, being at leaſt ſeven or eight ſhillings per head lower than laſt year. We have had heavy rains for ſeveral days paſt, which has retarded the harveſting of hay, the crop of which may be conſidered as a good one.'

*Letter from Falkirk, July 24.*

'Almoſt immediately after I laſt wrote you, an uncommon change took place in the weather, which for ſome time before had been dry and bitterly cold, but became mild and genial, with refreſhing ſhowers. Vegetation in conſequence advanced rapidly, and has continued almoſt uninterrupted ever ſince. The weather, for ſome time paſt, has been very warm and dry; but during the laſt four or five days, we have had a good deal of rain. Under ſuch circumſtances, any opinion of the probable return of the preſent crop would be little elſe than conjecture; ſo much muſt depend on warm dry weather at this critical period of the ſeaſon. Already many of the heavy crops are conſiderably lodged. Hay may be ſafely pronounced the worſt crop that has been in the diſtrict of the Carſe for ſome years; I underſtand, however, it is better on the dry-field ſoils. The ſecond crop promiſes to be luxuriant. Paſtures have been excellent through the whole ſeaſon, and, after ſo much rain of late, are likely to continue ſo. The diſtreſs often occurring from overſtocking can ſcarcely have been felt at all this ſeaſon, except under the moſt injudicious management, as the paſtures have been capable of carrying forward more than an ordinary ſtock. Upon the whole, the crop at preſent promiſes well, is more bulky than laſt year, particularly oats, and harveſt is likely to be early. The ſeaſon, however, has not been favourable for working the ſummer fallows; they are conſequently not in ſuch a high ſtate of cultivation as could be wiſhed for at this advanced period of the year, in a clay diſtrict, where ſo much hereafter depends on that proceſs being effectually accompliſhed; and the ſame cauſes that have produced a bulky crop of grain, have brought forward alſo abundance of weeds, ſo that the fields very generally look foul. Our grain market has advanced a little during the laſt quarter. Wheat ſells at 30s., Barley 20s., Beans 18s., Oats 20s. The price of hay is not yet fixed; but, notwithſtanding the bad crop of it in the Carſe, it is not expected to exceed 7d. a ſtone. The extenſive cultivation of ſown graſſes has of late years increaſed the quantity of that article beyond the demand.

In my laſt letter, when adverting to the importance of the tenure by leaſe to the general intereſts of agriculture, I took occaſion to mention ſome circumſtances reſpecting the barony of Kinniel in our neighbourhood, that appeared at the time to apply in illuſtration of that opinion; and in warmly eſpouſing the general cauſe, was led to animadvert ſomewhat pointedly on that particular caſe. The ſubſtance of the paragraph alluded to I had from one of the tenants in common converſation. It was at that time, indeed, the general topic of diſcourſe amongſt them, and, from having talked the matter often over, their fears (becauſe perhaps

haps the noble proprietor poſſeſſed the power) had at laſt magnified the poſſibility of ſuch an event into a reality. It now appears that all theſe fears had ariſen merely in conſequence of a gentleman of acknowledged talents in theſe matters having made a ſurvey of the eſtate, and, in the performance of that taſk, having neceſſarily made ſome inquiries amongſt the tenants. I have ſince learnt, not only that no intimation of removal had been given them by any of the agents of the nobleman to whom it belongs, but that no ſuch intention ever exiſted. I feel extremely happy to embrace the very firſt opportunity of making this acknowledgement to that nobleman, becauſe that paſſage in my laſt letter, without the ſmalleſt intention on my part, might perhaps by ſome be conſtrued into a pointed reflection on him as an individual, when it was meant merely to illuſtrate generally the value of the tenure by leaſe, in preference to any looſe manner of holding farms, which might ſubject tenants to a ſudden and unexpected removal, or to a lawſuit, perhaps the greateſt evil of the two.'

## *Mid-Lothian Quarterly Report.*

A FAVOURABLE change of weather took place about the 26th of April; and during the month of May vegetation proceeded with a degree of rapidity proportioned to the lateneſs of its commencement. The fields became green almoſt inſtantaneouſly, and never was old paſture graſs in greater abundance. But the ſame cannot be ſaid of new graſs; for, what from the want of plants owing to laſt year's drought, and their feebleneſs, ariſing from the chilneſs of ſpring, hay is a ſcanty crop. The price is not yet eſtabliſhed, but ſeveral ſales have been made at ninepence and tenpence per ſtone of 22 lib. from the rick. There will, however, be an immenſe difference in the qualities of hay this ſeaſon; a circumſtance that ought to be attended to both by ſellers and purchaſers of it, many fields being overrun with white gowans, which horſes will not taſte.

Wheat is a full crop every where as to bulk; and ſhould the next month prove mild and dry, may be expected to yield well. The various other crops alſo look well; but thoſe upon thin clay land ſtill evince that they are the offspring of a wet ſeed-time. A general harveſt will be a fortnight or three weeks later than laſt year, and the potato fields appear as much affected with the curl as ever.

Turnips have generally come up evenly; but they have lately been attacked by millions of caterpillars, which threaten their deſtruction. They are black, and about an inch long. They eat up all the leaves, and allow only the ſtems to remain. Various methods have been tried to kill them, ſuch as rolling, applying quicklime, ſoot, &c.; but all of them without ſucceſs. Some people have introduced ducks into the fields, who eat the worms with avidity; and others are at pains to employ boys and girls to go along the rows and bruiſe the animals between their fingers. It is hoped that the late rains will haſten the period of their exiſtence, or invigorate the remaining plants, ſo as to be able to withſtand the ravages of theſe deſtroyers.

Moorland lambs have fallen about 40 per cent. at the late markets; that

that is, thoſe that ſold for 10s. laſt year, now only bring 6s., and others in proportion. They are plentiful, but by no means good.—*July* 27.

*Kincardineſhire Quarterly Report.*

The late favourable weather has brought the crop, in general, over this county, very faſt forward. The oats are a thick crop. The bear, for we grow very little barley, is tolerable, though rather thin upon the ground. The wheat and peas excellent. Hay is a light crop; the clover in moſt places having failed. The firſt ſown turnips have ſuffered much from the fly; but thoſe ſown about the end of June and beginning of July look well. The paſtures never were more luxuriant than this ſeaſon; but, owing to the late drought, have become rather ſtinted in growth. Black cattle have declined conſiderably in price; and lean ſheep have fallen at leaſt a fourth in their value.—*July* 26.

*Aberdeenſhire Quarterly Report.*

Soon after laſt report, the weather changed for the better; and, on the whole, has proved favourable to this diſtrict through the ſummer quarter. The crop upon ſtrong land, and upon fields in good condition, is luxuriant; but the dry thin ſoils, eſpecially ſuch as are imperfectly cultivated, will yield but a poor return. If the ſeaſon continues favourable, there is every reaſon to believe that the crop, taking matters upon the great ſcale, will be rather above than below an average.

Hay harveſt is moſtly over, and the produce is good. Both turnips and potatoes have a promiſing appearance, and the paſtures preſent a full bite. For ſome weeks paſt, the cattle markets have been duller than formerly; but the depreſſion in price has been more with the ſmall and lean beaſts, than with thoſe of ſize and condition.——27*th July*.

*Morayſhire Quarterly Report.*

After a ſevere and backward ſpring, which by no means promiſed abundance, we were favoured with the fineſt ſeaſon, during May and part of June, that has been remembered for years. Afterwards the weather became remarkably dry, accompanied with ſcorching winds, which had a tendency not only to ſhorten the corn crop, and ſtint the paſtures on our dry grounds, but alſo threatened the turnips with deſtruction. Fortunately, we have now got moderate rains and warmth, which have had the beſt effects. And although in this county, where the ſoil varies from the pooreſt ſand to the moſt fertile loam, it is not to be expected, that any ſeaſon can ſuit all equally well; yet, on the whole, the growing crop promiſes well, and not to be late.

Wheat, oats, and peas are all good; if there is any particular deficiency, it appears to be in barley. It is at ſame time remarked, that many luxuriant wheat fields are infeſted with ſmut, a diſeaſe which (from whatever cauſe it proceeds) may certainly with attention be alleviated, if not entirely got the better of. We had no grain of laſt crop to ſpare, except wheat, which was ſold by the farmers at 21s. per boll, and has not at that low price turned out an advantageous purchaſe, being moſtly all winter thraſhed, and in many inſtances tinged with ſmut:

the ſouth country bakers have rejected it, and will continue to do ſo, while there is ſo much of fine quality at market. Hay is a middling crop, and ſo are both turnips and potatoes. Black cattle are much reduced in price; but ſtill might pay the breeder, if ſales could be readily effected, which is by no means the caſe.

Much of this county is well adapted for the cultivation of rye, from which many farmers are only deterred by want of a market. Should this report reach any diſtiller, inclined to contract for the purchaſe of this grain, his propoſals, addreſſed to the Secretary of the Morayſhire Farmer Club, will meet with due attention.——*July* 28.

*Letter from Glaſgow, 31ſt July.*

'The weather during the ſummer, eſpecially ſince the beginning of June, has been remarkably favourable for the coming crop. Hay is good and well ſecured; and the paſtures continue very fine. Wheat every where around us has a good appearance; and ſhould the preſent favourable weather continue till it is harveſted, an excellent crop, both in regard to quantity and quality, may be expected. Oats are not in ſo forward a ſtate; but have a very good appearance. Barley threatens to be a bad crop: there was but little ſown in this quarter, the ſeed-time being very unfavourable. Potatoes promiſe well. There was a conſiderable quantity planted this year; but the weather coming on very wet immediately after, a good part of the ſeed gave way in the low grounds, though, where the ſoil is tolerably dry, the crop appears to be very great. About three weeks ago, we had two or three nights of froſt, which conſiderably hurt this eſculent upon low marſhy grounds.

'Since the end of April laſt, there have been imported from Ireland into Clyde about 33,200 bolls of oats, and 10,200 bolls oatmeal. Two cargoes of wheat have, within theſe few days, arrived in the Clyde from Canada, and a conſiderable quantity more is daily expected. The quality of that grain this year from Canada is fine. Our port being open for importation of wheat at the low duty, during the laſt quarter, we had conſiderable quantities of Dantzic wheat in our market, which, with the farther ſupplies expected before the 15th November, will, we think, keep prices from advancing much here for a good while to come.'

State of Glaſgow Markets, July 31.

| | | |
|---|---|---|
| Canada Wheat | 23s. to 30s. | per boll of 240 lib. |
| Dantzic do. | 29s. — 31s. | per boll Linlithgowſhire meaſure. |
| Lynn do. | 27s. 6d. — 28s. | |
| Scotch do. | 28s. — 31s. | |
| Iriſh do. | 23s. — 24s. | |
| Barley | 24s. — 25s. | per boll Stirlingſhire meaſure. |
| Beans and Peas | 20s. — 21s. | |
| Grey Peas | 20s. — 21s. | |
| Small Oats | 18s. — 20s. | |
| Potato do. | 22s. — 23s. | |
| Iriſh do. | 22s. — 23s. 6d. | per boll of 264 lib. |

Old Hay 7d. to 8d.—New 5d. to 6d.—Straw 4d. to 5d. per ſtone.

*Letter*

*Letter from a Farmer in the Upper Ward of Lanark, July* 31.

'The oldeſt perſon living does not remember a better ſeaſon than we have experienced ſince the middle of May; of courſe, the crops of all kinds are good, eſpecially upon the dry ſoils. Turnips had a very promiſing appearance till the 18th July, when they were attacked by a dark grey worm, which was never ſeen before in this country. Whole fields were eat up in three or four days; and, in fact, one half of our turnip crop has been deſtroyed by theſe ravenous intruders. Potatoes are making a promiſing appearance; and the hay harveſt is generally over. Cattle and ſheep markets are dull. Stock lambs that ſold laſt year at 10s. 6d. will only now bring 6s. 6d.'

*Berwickſhire Quarterly Report.*

THE weather, during this quarter, has been fortunately calculated for correcting the bad effects which reſult from a wet ſeed-time; having been generally warm, with frequent ſhowers, which prevented the clay lands from binding ſo ſuddenly as they muſt otherwiſe have done. But this moiſture, while it tended to cheriſh the corn fields, rendered the preparation of turnip fallows, where the ſoil contained any mixture of clay, a very difficult buſineſs, and ultimately occaſioned a partial braird upon many ſoils of that deſcription. The light ſoils made a fine full braird; and though ſeveral fields have ſuffered conſiderably from the black caterpillar, the turnip crop at preſent may be ſaid to wear a promiſing aſpect.

Paſturage has been abundant, and young clovers are thriving; but, from the deficiency of plants in fields of laſt year's ſowing, hay cuts up very light; but potatoes are a promiſing crop.

Oats are in general good. Wheat is healthy, but ſeveral of the winter fields are thin on the ground. Barley had a ſickly appearance while in the ſhoot blade; and, though it has recovered much of late, will prove but a light crop. Peas and beans promiſe well, being luxuriant and full of bloſſom.

Upon the whole, the crops at preſent are very ſuperior to any thing which the moſt ſanguine agriculturiſt could anticipate from the complexion of affairs at ſeed-time; and, if we are favoured with a continuance of warm weather, the harveſt, inſtead of being late, will probably commence rather earlier than uſual.

Long wool has ſold currently at 24s. per ſtone of 24 lib. avoirdupois, which is 8 or 10 *per cent.* above laſt year; but the fleece has been deficient in weight nearly in the ſame proportion. Prices of lean ſtock have been recently on the decline.——*Aug.* 1.

*Eaſt-Lothian Quarterly Report.*

THOUGH we have experienced another dry ſummer, the crop of this diſtrict may be reported as equal to an average one. Wheat, generally ſpeaking, promiſes to yield well: Barley, in the preſent ſtage, is conſidered to be much ſuperior to the growth of laſt year. Beans and peas

are tolerably bulky, but indifferently podded; and Oats are a ſhort crop, as uſually happens with us in dry ſeaſons. Indeed, the bad effects of a wet ſeed-time have been more conſpicuous upon oats, than any other of the ſpring-ſown crops.

Hay proved a poor crop, and of inferior quality. Potatoes are rather more curled than cuſtomary. Turnips and ruta baga were ſeverely injured by the black caterpillar; but as this inſect has now diſappeared, many fields have aſſumed an excellent appearance. The paſtures were good in May and June, but latterly have fallen off conſiderably.

The grain market at Haddington has been poorly ſupplied through the ſummer, unleſs with wheat, which has conſtantly been plentifully preſented. There have been few purchaſes made at the ſea-ports, which, of courſe, augmented the quantity ſhown in the public market. The prices at preſent are—For good wheat, weighing 65 lib. per firlot, 31s.; Barley, 21s. to 21s. 6d.; Oats, yielding meal for corn, 21s. 6d.; Potato Oats, 24s.; Beans and peas, 18s. 6d.; all per boll Linlithgow ſtandard meaſure.——*Aug.* 1.

*N. B.*—Since the above was written, a material change of weather has taken place. On Friday and Saturday, more rain fell than has been received ſince the middle of April, which will be ſeverely felt by the ſtrong wheats, they being wholly beaten down thereby. Graſs, turnips, potatoes, and late oats, ſtand, however, a fair chance of being much benefited, though this depends greatly on the after weather. At this time, the weather is raw and cold, the wind blowing from the weſt. Harveſt will commence in many places this week, though no general cutting will take place for a fortnight at leaſt.——*Aug.* 6.

*Inverneſs-ſhire Quarterly Report,*

On the whole, we have had a very favourable ſummer, and our crop may be conſidered as of double value to what was reaped laſt year, though ſtill it cannot be reckoned as above a fair average one. During the courſe of this year, large importations of grain and meal have been made into this northern diſtrict; and, I believe, not fewer than forty thouſand bolls have been landed within the precincts of Inverneſs Cuſtom-houſe, which has drained the diſtrict of money, an article not to be ſoon ſupplied, as black cattle and ſheep have a dull ſale, and at reduced prices. Turnips and potatoes are abundant crops. Harveſt will be pretty general in this neighbourhood by the middle of Auguſt, if the weather continue favourable.——*Aug.* 2.

## ENGLAND.

*Letter from an extenſive Farmer in Dorſetſhire, July* 8.

'Our corn markets are nearly over for this ſeaſon, except what may be wanted from hand to mouth. In the firſt part of ſummer, we had fine dry weather, but latterly a good deal of rain has fallen, which has been a fortunate circumſtance for the late ſown crops, as, otherwiſe, they would not have been worth harveſting. Our wheats are but indifferent;

ferent; much injurry was done by the grub-worm in winter, and the ears in general are ſhort. The barley and oats were dying daily before rain arrived, but are now much refreſhed, though none of them can be bulky at harveſt. The ſpring was favourable to the water meadows, which now carry a large crop. Turnips, early ſown, were all deſtroyed by the fly, the greateſt enemy to that valuable root. We commonly here ſow them broad-caſt, but I have been in the habit of drilling for many years.

It is believed that the country is pretty full of ſtock, eſpecially of ſheep and lambs; but fat beaſts are ſcarce. This will excite no wonder, when it is conſidered that all our fleets in the Channel, and on the French coaſt, are ſupplied with live ſtock from Portſmouth and Plymouth. Beef, at preſent, is worth from 12s. to 14s. per ſcore; Mutton, in market, 8d. per lib.; Lamb and Veal much the ſame. Our ſheep fairs are juſt beginning. At Dorcheſter, on Friday, few people attended; ſo no judgement can as yet be formed of the prices. Little wool is ſold yet, though the article is expected to advance.'

*Letter from a Farmer in Wales, July 15.*

'Since I wrote you in April, the weather has been favourable, and vegetation extraordinary rapid, which gave us at once a great flush of graſs. The demand for cattle was, of courſe, as great as ever known here, though lately matters are at a ſtand, and prices on the drop. Ewes and lambs ſold briſkly in the beginning of the ſeaſon, but this did not continue long; for ſuch lambs as laſt year were worth 20s., will not now bring more than 14s.

Corn crops on the ground make a good appearance. Oats and barley, particularly on clay ſoils, were much ſtinted before the late rains, but are now greatly recovered; and if we have a favourable harveſt, a ſaving crop may be expected. The early ſown turnips, owing to the dry weather in June, failed in many places; but the latterly ſown ones have come up well, and promiſe to make a good crop. The hay fields give a good return, and a great part of the produce is ſecured in proper condition. Potatoes are excellent.'

*Northumberland Quarterly Report.*

The ſcarcity of food, ſo much complained of in the latter end of April, was relieved by the weather ſetting in fine and freſh in the beginning of May; and a quick vigorous vegetation immediately ſucceeding, and continuing for ſome weeks, made the paſtures remarkably good, and, upon the old graſs lands, the hay crop abundant. The caſe is otherwiſe with the clovers, which are not only deficient in plants, but the few that are, have not grown with their uſual luxuriance. This deficiency is ſuppoſed to have been occaſioned by the cold and wetneſs of the ſpring months.

The turnips were in general put in with a ſufficient degree of moiſture; and, of courſe, they came very well, eſpecially thoſe ſown the beginning of June; but many of the early ſown were much injured, by the fly deſtroying the ſeminal leaves, which occaſioned ſeveral crops to be ſown over again. But a worſe enemy (the ſmall black caterpillar)

is at preſent making its appearance, and deſtroying them with great rapidity.

Wheat has the appearance of being every where thin; but the other kinds of grain promiſe, on the whole, to be nearly an average crop.

The markets for lean ſtock have been lowering for ſome time. Sheep are ſold from 5s. to 10s. a head leſs than laſt year. Wool is advanced, long wool being ſold from 24s. to 26s. per ſtone of 24 lib. The corn market is alſo advancing.——*July* 21.

*Yorkſhire Quarterly Report.*

THE produce of hay is generally abundant; the winning of it rather backward, much being ſtill out in many parts of the country: yet a conſiderable quantity has been ſaved in tolerable order, the weather not having been ſhowery during the whole of the ſeaſon. The after-graſs is growing rapidly, by the return of frequent ſhowers. Theſe circumſtances have produced a conſiderable decline in the price of hay, both new and old. The preſent value is about 4l. per ton.

Many crops of wheat promiſe well; but many alſo are complained of as being ſhort and ſmall in the ear, even on the beſt ſoils, and under the beſt management. This crop is remarkably better on the clover leas of all ſorts, than the bean ſtubbles; though the beans were a good crop laſt year. Barley is good; Oats by much the worſt in general; Beans wear the aſpect of abundance, both in ſtraw and pod. Apples in this part of the country are in tolerable plenty; but the writer of this report, in a late journey through Herefordſhire and neighbouring counties, obſerved a total failure of that fruit; the orchards, nearly without an exception, preſenting the melancholy aſpect of naked branches, deſtitute both of fruit and leaves. Rape and flax are good. Potatoes peculiarly good and abundant.

Notwithſtanding the excellent tilth and manuring beſtowed on the turnip fallows, the crops of that root are in moſt places extremely unpromiſing. Many fields of them have been much damaged by the worm-ſlug, &c.; others have been ploughed up, and the ground reſown, and ſome will ſtand for leſs than half a crop. This complaint appears to be general throughout all the turnip diſtricts. Probably ſome attention to Vagg's method of *night-rolling* might this ſeaſon have been beneficial. On the whole, there is reaſon to infer that this crop has become more and more precarious on moſt ſoils. The ſummer fallowing of ſtrong and wet ſoils is rather in a backward ſtate.

Grain of all ſorts has of late been advancing in price. Beſt Wheat about 9s.; Rye, 5s.; Barley, 4s.; and Oats, 3s. 6d. per buſhel of Wincheſter. Wool hereabouts maintains a rate as high, if not higher than that of laſt ſeaſon. Fat and lean cattle are lower, though the paſtures are luxuriant.——*July* 28.

*Letter from London, July* 30.

'The ſeaſon has been very favourable for the growing crops; the rains we had in the month of June came in time to ſave the laſt-ſown barleys,

leys, which were beginning to feel the effects of the drought; and from the late rains, the barleys are much improved. The turnip crop will in general be a good one. The wheat, in the ſeveral counties near the metropolis, generally ſpeaking, is but a thin crop, and in ſeveral diſtricts has ſuffered from blight. On the ſtrong lands in Kent the crops are good, but moſtly laid down by the heavy rains; but on the light lands they are thin, and very foul. Oats in ſeveral diſtricts are good, and in general will be a fair average. The early White Peas are very light; Hog Peas in general look well, and the accounts from Suffolk of their White Pea crop are favourable. Beans will be a fair average.—The proſpect of the Hops in Kent and Surrey is very favourable; in conſequence of which the price of that article is on the decline.—The hay crop near London has been a very abundant one, and was all harveſted in the beſt order. Old hay is now ſold from 4l. to 4l. 10s. per load, which in the early part of May, from the bad appearance of the crop then, had ſold from 5l. 6s. to 5l. 10s.—The ſupply of oats at Mark-Lane for a month paſt has been chiefly foreign, and very few of fine quality. For two months paſt we have had none from the North, and very few from Yorkſhire.—Rye has been cutting down for two days paſt, and appears a good crop. A few oats on light lands will be cut in the courſe of this week; and, ſhould this favourable weather continue, we may expect harveſt to be general in the courſe of ten days.

'State of London Markets, July 30.

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| Wheat | 38s. 58s. 64s. | Grey Peas | 38s. to 41s. |
| Fine Eſſex and Kent | 68s. | Small Beans | 40s. to 42s. |
| Foreign Red | 35s. to 58s. | Oats, Long feed | 20s. to 24s. |
| White Dantzic | 56s. to 69s. | — Short Smalls, or Friſe-lands | 25s. to 27s. 6d. |
| Rye | 28s. to 32s. | — Polands | 27s. to 29s. |
| Barley | 26s. 30s. 32s. | All per Qr. of 8 Winch. buſhels. | |
| Malt | 65s. to 72s. | | |

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| Fine Flour delivered to the bakers | 53s. to 55s. per ſack. |
| New Rape Seed | 37l. to 39l. per laſt. |
| Old Hay | 4l. to 4l. 10s. per load. |
| New Ditto | 4l. per ditto. |
| Straw | 30s. to 32s. per ditto. |

*Norfolk Quarterly Report.*

The favourable opinion given in laſt Report of the wheat crop in this county, is not likely to be eſtabliſhed by facts; for, owing to the premature luxuriance formerly mentioned, and to the ravages of the grub and wire-worm, the plants have been ſo thinned, that the produce cannot poſſibly exceed three fourths of an average crop; and this concluſion is drawn without making any allowance for blight or mildew, which have already appeared in many fields, and muſt deteriorate the quality, and reduce the quantity conſiderably. The miſchief occaſioned by the grub and wire-worm may be palliated, perhaps completely prevented, as the evil muſt in a great meaſure be attributed to the prevailing

vailing practice of ſowing upon the flag, and the abandonment of ſummer fallows, which neceſſarily occaſions an increaſe of theſe reptiles. Barley is thin, and full of weeds, and, with oats, cannot be reported at three fourths of an average. Peas are, in ſome inſtances, injured by the louſe. Beans are very good.

The artificial graſſes exhibited, in the ſpring months, a full plant with a healthy countenance; but afterwards received a check, which they never recovered. The marſhes and meadows produced an abundant crop; but the produce has been much injured by the late heavy and repeated rains. Turnips ſuſtained ſome partial injuries, firſt from the fly, and afterwards from the black canker which this year appeared unuſually early. Viewing the county at large, they may however be ſaid to preſent a favourable appearance.

Grain has lately increaſed in price. This advance is, by ſome people, attributed to the new corn bill, and probably it may have ſome effect; but there is reaſon to think that the efficient cauſe is the preſent appearance of the growing crop. Harveſt will be pretty general in twelve or fourteen days.——*Auguſt 2.*

## NOTICES TO CORRESPONDENTS.

Notwithſtanding that *Sixteen Additional Pages* are given, we have been obliged to preſent every article of Intelligence in an abridged ſtate. This was occaſioned by our receiving *the Reports of the Corn and Malt-Tax Committees* after the greateſt part of the Firſt Branch was printed.

The '*View of Society amongſt Farmers, compared with what it was fifty years ago,*' ſhall have a place, provided the ingenious author allows us to leave out a few perſonalities. From the local knowledge diſplayed concerning Eaſt-Lothian, it is preſumed the author can be at no loſs where to find the Conductor of this work; therefore if his addreſs is communicated, a copy of the amendments judged neceſſary ſhall be laid before him.

AMICUS SCOTIÆ's favour is very acceptable, and ſhall, in next Number, be preſented to our readers.—A PROJECTOR will conſider his judicious obſervations as placed under ſimilar circumſtances.

Though *poetical pieces* do not in general caſes enter within the limits of our plan, yet, out of reſpect to the memory of the late DUKE OF BEDFORD, the *Elegy* lately ſent us ſhall be inſerted.

The Second Letter '*on the Improvement of different ſoils for rearing Sheep,*' though delayed, is not neglected. The liberal ſupplies lately ſent us, which we have not room to particularize, call for our moſt grateful ackowledgements.

The *Liverpool Meteorology*, delayed laſt Number, with the article ſent at this time, will be inſerted in our next.

No. XX. will be publiſhed on Monday, 12th November.

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Dele the running title p. 311. and ſubſtitute in its place—'*On the Agriculture of the Netherlands.*'